

Providence City
Public Works Department
Staff Report

January 27th, 2015

Prepared by: Randy Eck

Street Department

- Nothing new to report

Culinary Water Department

- Nothing new to report

Sanitary Sewer Department

- Attached are two (2) documents for you to review during the next couple of weeks and we will discuss them at the next council meeting.

The first is a copy of the State of Utah General Permit for Operation of a Public Sanitary Sewer Collection System. The permit requires that we adopt a Sanitary Sewer Management Plan. The second attachment is a copy of the management plan that I have prepared. It is a template that most required entities are using to meet this requirement. It has already been in front of many city attorney's and is regarded to be legal and acceptable.

Storm Water Department

- Attached is a copy of the Northern Utah Storm Water Design Standards for your review. I will be asking that you adopt this to aid in our storm water program. I have discussed this with our city engineers and they are in support of the document. Adopting this will also help in compliance with our storm water audit.

Parks Department

- Nothing new to report

General Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO OPERATE A PUBLIC SANITARY SEWER
COLLECTION SYSTEM IN THE STATE OF UTAH

GENERAL PERMIT FOR OPERATION OF A PUBLIC SANITARY SEWER
COLLECTION SYSTEM IN THE STATE OF UTAH

In compliance with provisions of the *Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended (the "Act")*,

(NAME OF PUBLIC SEWER COLLECTION ENTITY)

is hereby authorized to operate a public wastewater sewer collection system as identified in the *Notice of Intent* (NOI), issued coverage number **UTG580000**, under this general permit in accordance with planning, design, operation, maintenance and monitoring requirements and other conditions set forth herein.

This permit shall become effective on October 1, 2012.

This permit and the authorization to discharge shall expire at midnight September 30, 2017.

Signed this XXth day of August, 2012.

Walter L. Baker, P.E.
Director
Utah Division of Water Quality

TABLE OF CONTENTS

<u>Cover Sheet--Issuance and Expiration Dates</u>	<u>Page No.</u>
I. COVERAGE, OPERATING AND MONITORING REQUIREMENTS.....	2
A. Coverage under the General Permit.....	2
B. Requiring an Individual Permit.....	2
C. Limitations on coverage.....	3
D. General Permit Provisions.....	5
E. Sewer System Management Plan (SSMP) Requirements.....	6
F. Certification, Submission and Implementation Requirements.....	10
II. MONITORING, RECORDING AND REPORTING REQUIREMENTS.....	11
A. Monitoring, Measurement and SSMP Modifications.....	11
B. Record Keeping and Reporting.....	11
C. Inspection and Entry.....	12
D. Monitoring and Records.....	12
III. COMPLIANCE RESPONSIBILITIES.....	14
A. Duty to Comply.....	14
B. Penalties for Violations of Permit Conditions.....	14
C. Need to Halt or Reduce Activity not a Defense.....	14
D. Corrective Action.....	14
E. Effect of Corrective Action.....	14
F. Adverse Incident or Non-Compliance Documentation and Reporting.....	14
G. Reportable Spills and Leaks.....	16
H. Other Corrective Action Documentation.....	16
I. Duty to Mitigate.....	17
J. Proper Operation and Maintenance.....	17
K. Upset Conditions.....	17
L. Removed Substances.....	17
M. Industrial Pretreatment.....	18
IV. GENERAL REQUIREMENTS.....	19
A. Permit Actions.....	19
B. Duty to Reapply.....	19
C. Duty to Provide Information.....	19
D. Other information.....	19
E. Signatory Requirements.....	19
F. Reporting Requirements.....	20
G. Property Rights.....	20
H. Severability.....	20
I. Transfers.....	20
J. Anticipated Noncompliance.....	21
K. Permit Reopener Provision.....	21
V. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS.....	22
A. Definitions.....	22

APPENDIX

I. COVERAGE, OPERATING AND MONITORING REQUIREMENTS.

A. Coverage under the General Permit

1. Coverage under this permit is required for any sewer collection system owner or operator ("entity") who owns or operates a "sewer collection system" (as defined in Part V) and is required to submit a Notice of Intent (NOI) in accordance with Part I.A. With coverage under the general permit the "entity" is referred to as a "permittee" (as defined in Part V).
2. The permittee is authorized to operate a sewer collection system under the terms and conditions of this permit after September 30, 2012 in accordance with R317-801.
3. Submission of a completed NOI. For coverage under the Sewer System General Permit (SSGP) beginning October 1, 2012 the permittee must submit a completed NOI on or before that date. The permittee is expected to obtain a copy of the permit, and conform with all the requirements of the permit beginning October 1, 2012. Under this submission coverage under the SSGP will continue through the five year cycle of the general permit, ending September 30, 2017.

Prior to September 30, 2017 the permit will be reissued for another five-year term ending September 30, 2022. For continued coverage from the previous permit to the reissued permit, the permittee must submit an updated NOI on or before September 30, 2017. Beyond that time the SSGP will be similarly renewed and NOI submissions will be required for continued coverage on repeating five-year cycles.

An NOI form may be found on the Water Quality website at: www.waterquality.utah.gov and in the Appendix of this permit. It should be mailed, with an original authorizing signature, to:

Mailing Address:
Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

Physical Address:
Department of Environmental Quality
Division of Water Quality
195 North 1950 West
Salt Lake City, Utah 84116

General permit coverage will be in effect when the Notice of Intent has been submitted, approved and declared complete by the Division Director.

B. Requiring an Individual Permit

1. It is anticipated that coverage under the SSGP will be appropriate and adequate for all sewer collection system entities. In the rare situation, due to an unusual situation or

conditions, this may not be the case, the Division Director may require any permittee authorized by this permit to apply for an individual sewer system permit only if the permittee has been notified in writing that an individual permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the permittee to file the application, and a statement that on the effective date of the individual permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate.

Entities which own non-public or privately held sewer collection systems may be required to obtain either individual or general permit coverage if unusual conditions warrant, as determined by the Director.

Applications for an individual permit shall be submitted to the address of the Division of Water Quality (DWQ) shown above.

2. The Division Director may grant additional time to submit the application upon receipt of a written request of the applicant. If an entity fails to submit in a timely manner an individual permit application, as required by the Division Director, then the applicability of this permit to the individual permittee is automatically terminated at the end of the day specified for application submittal.
3. Any permittee authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. In such cases, the permittee shall submit a request for an individual permit with reasons supporting the request, to the Division Director at the address for the Division of Water Quality in the NOI. The request may be granted by issuance of any individual permit or an alternate general permit if the reasons cited by the permittee are adequate to support the request.
4. When an individual permit is issued to an entity otherwise subject to this permit, or the entity is authorized for coverage under an alternate general permit, the applicability of this permit to the individual permittee is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the alternate general permit, whichever the case may be. When an individual permit is denied to an entity otherwise subject to this permit, or the entity is denied for coverage under an alternate general permit, the applicability of this permit to the individual permittee is automatically terminated on the date of such denial, unless otherwise specified by the Division Director.

C. Limitations on coverage.

1. Based on a review of your NOI or other information, DWQ may delay your authorization for further review, or may determine that additional requirements are necessary, or may deny coverage under this permit and require submission of an application for an individual permit, as detailed in Part I.B.
2. Continuation of this Permit. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. If you were authorized to operate under this permit prior to the expiration date, any

operations authorized under this permit will automatically remain covered by this permit until the earliest of:

- a. Your authorization for coverage under a reissued permit or a replacement of this permit following your timely and appropriate submittal of a complete NOI requesting authorization to operate under the new permit and compliance with the requirements of the NOI;
- b. The submittal and processing of your Notice of Termination consistent with I.C.3;
- c. The issuance or denial of an individual permit for operation that would otherwise be covered under this permit;
- d. A formal permit decision by DWQ not to reissue this general permit, at which time DWQ will identify a reasonable time period for covered entities to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or
- e. DWQ has informed you that you are no longer covered under this permit.

3. Terminating Coverage

- a. Submitting a Notice of Termination (NOT). To terminate permit coverage, a permittee who is required to submit an NOI as identified in Part I.A.3., must submit a complete and accurate NOT. Information required to be included in a Notice of Termination (also found on our website at <http://www.waterquality.utah.gov/>) is provided in the NOT. Permittees required to submit a Notice of Termination should submit that information on an NOT form and send it to the DWQ. The authorization to operate under this permit terminates at midnight ten days after the postmarked date that the NOT is mailed to the DWQ. If you submit a Notice of Termination without meeting one or more of the conditions identified in Part I.C., then your Notice of Termination is not valid. You are responsible for complying with the terms of this permit until your authorization is terminated.
- b. When to Submit a Notice of Termination. An operator who is required to submit an NOI as identified in Part I.A. must submit a Notice of Termination within 30 days after one or more of the following conditions have been met:
 - 1) A new owner has taken over responsibility of your sewer collection activities covered under an existing NOI;
 - 2) You have ceased all operations of the collection system for which you obtained permit coverage and you do not expect to operate the system during the remainder of the permit term; or
 - 3) You have obtained coverage under an individual permit or an alternative general permit for all sewer collection system operations, unless you obtained coverage consistent with Part I.A., in which case coverage under this permit will terminate automatically.

D. General Permit Provisions.

1. Prohibitions.

- a. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the State is prohibited.
- b. Any SSO that results in a discharge of untreated or partially treated wastewater that creates a health hazard, nuisance, or is a threat to the environment is prohibited.

2. General SSO Requirements.

- a. The permittee shall take all feasible steps to eliminate SSOs to include:
 - 1) properly managing, operating, and maintaining all parts of the sewer collection system;
 - 2) training system operators;
 - 3) allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,
 - 4) providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.
- b. SSOs shall be reported in accordance with the requirements of Part I.D.3.
- c. When an SSO occurs, the permittee shall take all feasible steps to:
 - 1) control, contain, or limit the volume of untreated or partially treated wastewater discharged;
 - 2) terminate the discharge;
 - 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,
 - 4) mitigate the impacts of the SSO.

3. General Permit SSO Reporting Requirements.

- a. SSO Reporting. SSOs shall be reported as follows:
 - 1) A Class 1 SSO shall be reported orally within 24 hrs and with a written

report submitted to the DWQ within five calendar days. Class 1 SSO's shall be included in the annual USMP report.

- 2) Class 2 SSOs shall be reported on an annual basis in the USMP annual report.

4. Annual Report.

- a. A permittee shall submit to DWQ a USMP annual operating report covering information for the previous calendar year by April 15 of the following year. The report may be submitted as a part of the annual Municipal Wastewater Planning Process.

E. Sewer System Management Plan (SSMP) Requirements.

1. SSMP. The permittee shall have and implement a written SSMP and shall make it available to DWQ upon request. A copy of the SSMP shall be publicly available at the permittee's office and/or available on the Internet. The SSMP must be publicly noticed by the permittee and approved by the permittee's governing body at a public meeting. The main purpose of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur.
2. Contents of SSMP. The SSMP shall include:
 - a. Organization Information to include:
 - 1) The name or position of the responsible or authorized representative;
 - 2) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and,
 - 3) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to DWQ, the public (if needed) and other agencies if applicable (such as County Health Department).
 - b. Sewer collection system use ordinances, service agreements, or other legally binding methods, that:
 - 1) Prohibit unauthorized discharges into its sewer collection system i.e. I/I, stormwater, chemical dumping, unauthorized debris and cut roots;
 - 2) Require that sewers and connections be properly designed and constructed;
 - 3) Ensure access for maintenance, inspection, or repairs for portions of the laterals owned or maintained by the permittee;

- 4) Limit the discharge of FOG and other debris that may cause blockages;
 - 5) Require compliance with pretreatment requirements;
 - 6) Provide authority to inspect industrial users; and,
 - 7) Provide for enforcement for violations of the requirements.
- c. An Operations and Maintenance Plan which includes:
- 1) An up-to-date map of the sewer collection system, showing all gravity line segments, manholes, pumping facilities, pressure pipes, gates and all other applicable conveyance facilities;
 - 2) A description of routine preventative operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sewer collection system with more frequent cleaning and maintenance targeted at known problem areas. The plan should include regular visual and TV inspection of manholes and sewer pipes and a system of ranking the condition of sewer pipe and manholes. The plan should have an appropriate system to document scheduled and all other types of work activities, such as a maintenance, management, system, or paper work orders;
 - 3) A Rehabilitation, Replacement and Improvement Plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each class of deficiencies. Rehabilitation and replacement should focus on sewer pipes that are at risk of failure or prone to more frequent blockages due to pipe defects. The rehabilitation and replacement plan shall include a CIP, if required, that addresses proper management and protection of the infrastructure assets;
 - 4) Schedule for training on a regular basis for staff and contractors in operations and maintenance consistent with DWQ continuing education requirements for certified operators; and,
 - 5) Providing for equipment and replacement part inventories, including identification of critical replacement parts. (This may include a list of vendors that the equipment and/or part can be purchased from, or local agreements).
- d. Design and performance provisions which include:
- 1) Design, construction standards and specifications that meet or exceed R-317-3 for the installation of new sewer collection systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sewer collection systems; and,
 - 2) Procedures and standards for inspecting, testing and documenting the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

- e. A SORP which has the following measures to protect public health and the environment:
 - 1) A program to respond to overflows which addresses:
 - a) Receipt and documentation of information regarding a sewer overflow;
 - b) Dispatch of appropriate crews to the site of the sewer overflow;
 - c) Overflow correction, containment, and cleanup including procedures to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the State and to minimize or correct any adverse impact on the environment resulting from the sewer overflow;
 - d) Preparation of an overflow report by responding personnel; and,
 - e) Follow up with affected persons,
 - 2) Procedures for prompt notification to the public.
 - 3) Procedures to notify appropriate regulatory agencies and other potentially affected entities to include:
 - a) DWQ to comply with SSO reporting requirements;
 - b) County Health Department, local water supply agencies as appropriate, and other affected agencies should the SSO potentially affect the public health or reach the waters of the State;
 - c) Utah Division of Emergency Response and Remediation, if hazardous materials are or may be involved; and,
 - d) Any other required UPDES, State, or Federal reporting requirements.
 - 4) Procedures to ensure that appropriate staff personnel are aware of and follow the SORP and are appropriately trained.
- f. For permittees with 2000 or more connections, and at the option of permittees with less than 2000 connections, a FOG control plan consistent with the potential for FOG discharge from commercial and industrial dischargers. Where required, the FOG control plan shall include some or all of the following:
 - 1) An implementation plan and schedule for a residential and commercial public education outreach for the FOG control plan that promotes proper disposal of FOG;
 - 2) A plan for the disposal of FOG generated within the permittee's service area.

This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG;

- 3) Sewer collection system use ordinances, service agreements, or other legally binding methods, that prohibit FOG discharges to the system;
 - 4) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
 - 5) A FOG inspection, monitoring and evaluation plan;
 - 6) Identification of resources to do inspections and enforce the FOG control plan; and,
 - 7) A maintenance schedule for lines affected by FOG blockages.
- g. For permittees with 2000 or more connections, and at the option of permittees with less than 2000 connections, a SECAP. Where required, the SECAP shall include the following:
- 1) an evaluation of the wastewater collection system's existing hydraulic capacity using historical information such as flow, system records, current zoning, local development options, and maintenance records;
 - 2) identification of system deficiencies; and,
 - 3) a CIP that includes an appropriate model for the system that can be used to evaluate the hydraulic conditions in the system and identify existing and forecast future deficiencies to provide hydraulic capacity such as for future dry weather peak flow conditions, as well as the appropriate design for storm or wet weather events. The CIP shall establish a short and long term schedule to address the deficiencies and conditions identified, including a priority list, alternative analysis, and schedule for recommended upgrades. The CIP shall include increases in pipe size, I/I reduction plans, increases in pumping capacities and/or redundancies, storage capacity increases and recommended trunk line cleaning schedules or other monitoring activities. The CIP shall identify the sources of funding. The schedule shall be reviewed and adjusted yearly.

F. Certification, Submission and Implementation Requirements.

1. Timeline for Notice, SSMP, and Certification. The permittee shall certify to DWQ that a SSMP is in place that is in compliance with the USMP by submitting a notice to DWQ within the time frames identified in the following time schedule:

Table 1. Timeframe for Implementation.

Task	Completion Dates by Population			
	>50,000 population	15,001 to 50,000 population	3,501 to 15,000 population	3,500 and Less population
Notice of Intent to be covered by General Permit	2 weeks after submission of NOI to DWQ			
Completion of SSMP (excluding SECAP)	Sept 30, 2014	Mar 31, 2015	Sept 30, 2015	Mar 31, 2016
Completion of SECAP when required	Sept 30, 2015	Mar 31, 2016	Sept 30, 2016	Sept 30, 2017

2. Significant Modifications. Significant modification of the SSMP must be public noticed by the permittee and approved by the permittee's governing body at a public meeting. A new notice certifying the revised SSMP is in place shall be sent to DWQ.
3. Incomplete Reports. If a permittee becomes aware that it failed to submit required information in any notice or report, the permittee shall promptly amend the notice or report.
4. Certification of Notices and Reports. All notices and reports submitted to DWQ shall be signed and certified as required in R317-8-3.4.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Monitoring, Measurement and SSMP Modifications.

1. The permittee shall maintain relevant information that can be used to establish and prioritize appropriate SSO prevention activities and shall document all monitoring activities (i.e. daily cleaning activities, CCTV video records, manhole inspections, and hot spot activities).
2. The permittee shall regularly review the effectiveness of each element of the SSMP and shall monitor the SECAP implementation (when required).
3. The permittee shall annually assess the success of the operation and maintenance plan (i.e. line cleaning, CCTV inspections and manhole inspections, and SSO events) and adjust the operation and maintenance plan as needed based on system performance.
4. The permittee shall update SSMP elements, as appropriate, based on monitoring or performance evaluations.
5. The permittee shall regularly identify and illustrate SSO trends, including frequency, location, and volume.
6. The permittee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every five years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the permittee's compliance with the SSMP, including identification of any deficiencies in the SSMP and steps to correct them.
7. The permittee is encouraged to communicate with the public, as needed, on the development, implementation, and performance of the SSMP. The permittee may establish a public outreach/communication plan which shall provide the public with the opportunity to provide input to the permittee as the SSMP is developed and implemented.
8. The SSMP shall be prepared by, or under the direction of, a Utah certified professional engineer or another qualified professional.
9. The SSMP must be completed by the deadlines listed in the Timeframe for Implementation in Part I.F.

B. Record Keeping and Reporting

1. You must keep written records as required in this permit. These records must be accurate and complete and sufficient to demonstrate your compliance with the conditions of this permit. You can rely on records and documents developed for other obligations, such as other planning or funding requirements, provided all requirements of this permit are satisfied.
2. All operators must keep the following records:

PART II
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

- a. A copy of this permit
 - b. A copy of any SSO and Annual Reports (See Part I. D.)
 - c. Your rationale for any determination that reporting of an identified adverse incident is not required consistent with allowances identified in Part I. D.
 - d. A copy of any corrective action or enforcement documentation (See Part III.H.)
 - e. A copy of the NOI submitted to DWQ, any correspondence exchanged between you and DWQ specific to coverage under this permit;
 - f. A copy of your SSMP, including any modifications made to the SSMP during the term of this permit.
3. All required records must be documented as soon as possible but no later than 14 days following completion of such activity. You must retain any records required under this permit for at least five years from the date that your coverage under this permit expires or is terminated. You must make available to DWQ, including an authorized representative of DWQ, all records kept under this permit upon request and provide copies of such records, upon request.
 4. Keep records of any information exchanged related to twenty-four hour and five day adverse incident or non-compliance reporting.

C. Inspection and Entry.

You must allow DWQ or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon your premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - a. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - b. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. Monitoring and Records.

1. You must retain records of all reports required by this permit, and records of all data used to complete the Notice of Intent for this permit, for a period of at least five years from the date the permit expires or the date the operator's authorization is terminated.

PART II
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

This period may be extended by request of DWQ at any time.

2. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.
3. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, for a period of at least five years from the date the permit expires or the date the operator's authorization is terminated. This period may be extended by request of DWQ at any time.
4. Records of monitoring information must include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
5. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.
6. Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Division Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions

The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the *Act* is subject to a fine not exceeding \$25,000 per day of violation; Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding \$50,000 per day. Except as provided at *Part III.F, Adverse Incident Documentation and Reporting, Part III.K, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Corrective Action.

If any of the following situations occur, you must review and, as necessary, revise the evaluation and selection of your control measures to ensure that the situation is eliminated and will not be repeated in the future:

1. An unauthorized release or discharge associated with the operation of a sewer collection system (e.g., spill, leak, or discharge not authorized by this or another permit) occurs;
2. You become aware, or DWQ concludes, that your control measures are not adequate/sufficient for the discharge to meet applicable water quality standards;

E. Effect of Corrective Action.

The occurrence of a situation identified in Part III.D may constitute a violation of the permit. Correcting the situation according to Part III.A does not absolve you of liability for any original violation. However, failure to comply with Part III.D constitutes an additional permit violation. DWQ will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations. DWQ or a court may impose additional requirements and schedules of compliance, including requirements to submit additional information concerning the condition(s) triggering corrective action or schedules and requirements more stringent than specified in this permit. Those requirements and schedules will supersede those of Part III.D. if such requirements conflict.

F. Adverse Incident or Non-Compliance Documentation and Reporting

PART III
Permit No. UTG580000

Utah Sanitary Sewer Management Program General Permit

1. Twenty-Four (24) Hour Adverse Incident on Non-Compliance Notification

If you observe or are otherwise made aware of an adverse incident, that may have resulted from a discharge from your collection system, you must immediately notify the DWQ Incident Reporting line at (801) 536-4300, or 24-hour answering service (801) 536-4123. This notification must be made by telephone within 24 hours of you becoming aware of the adverse incident and must include at least the following information:

- a. The caller's name and telephone number;
 - b. Operator/Owner name and mailing address;
 - c. If covered under an NOI, the NOI NPDES tracking number;
 - d. The name and telephone number of a contact person, if different than the person providing the 24-hour notice;
 - e. How and when you became aware of the adverse incident on non-compliance;
 - f. Description of the location of the adverse incident;
 - g. Description of the adverse incident identified; and
 - h. Description of any steps you have taken or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects.
2. If you are unable to notify DWQ within 24 hours, you must do so as soon as possible and also provide your rationale for why you were unable to provide such notification within 24 hours.
3. Reporting of adverse incidents is not required under this permit in the following situations:
- a. You are aware of facts that clearly establish that the adverse incident was not related to any administrative function or operation of your sewer collection system.
 - b. You have been notified in writing by DWQ that the reporting requirement has been waived for this incident or category of incidents.
 - c. You receive information notifying you of an adverse incident but that information is clearly erroneous.
4. Five (5) Day Adverse Incident or Non-Compliance Written Report. Within five (5) days of a reportable adverse incident pursuant to Part III.G.1, you must provide a written report of the adverse incident to the DWQ. Your adverse incident report must include at least the following information:
- a. Information required to be provided in Part III.G.1;
 - b. Date and time you contacted DWQ notifying the Agency of the adverse incident and who you spoke with at DWQ and any instructions you received from DWQ;
 - c. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc);
 - d. A description of the circumstances of the adverse incident including species affected, estimated number of individual and approximate size of dead or distressed organisms;
 - e. Magnitude and scope of the effected area (e.g. square area or total stream distance affected);
 - f. If laboratory tests were performed, indicate what test(s) were performed, and when, and provide a summary of the test results within 5 days after they become

PART III
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

- available;
- g. If applicable, explain why you believe the adverse incident could not have been caused by exposure to the pesticide;
- h. Actions to be taken to prevent recurrence of adverse incidents; and
- i. Signed and dated in accordance with Part IV.F.

5. Adverse Incident to Threatened or Endangered Species or Critical Habitat

Notwithstanding any of the other adverse incident notification requirements of this section, if you become aware of an adverse incident to a federally-listed threatened or endangered species or its federally-designated critical habitat, that may have resulted from a discharge from your collection system, you must immediately notify the U.S. Fish and Wildlife Service (FWS) at 801-975-3330, Contaminants Division. This notification must be made by telephone immediately upon your becoming aware of the adverse incident and must include at least the following information:

- a. The caller's name and telephone number;
- b. Operator name and mailing address;
- c. The name of the affected species;
- d. How and when you became aware of the adverse incident;
- e. Description of the location of the adverse incident;
- f. Description of the adverse incident, and
- g. Description of any steps you have taken or will take to alleviate the adverse impact to the species.

Additional information on federally-listed threatened or endangered species and federally-designated critical habitat is available from FWS (www.fws.gov) for terrestrial or freshwater species.

G. Reportable Spills and Leaks

- 1. The permittee shall (orally) report any noncompliance, including transportation accidents, and spills which may seriously endanger public health or the environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

H. Other Corrective Action Documentation.

For situations identified in III.F., other than for adverse incidents (addressed in Part III.F.1, or reportable spills or leaks (addressed in Part III.G.), you must document the situation triggering corrective action and your planned corrective action within five (5) days you become aware of that situation and retain a copy of this documentation. This documentation must include the following information:

- 1. Identification of the condition triggering the need for corrective action review, including any ambient water quality monitoring that assisted in determining that discharges did not meet water quality standards;
- 2. Brief description of the situation;

PART III
Permit No. UTG580000

Utah Sanitary Sewer Management Program General Permit

3. Date the problem was identified.
 4. Brief description of how the problem was identified and how the operator learned of the situation and date the operator learned of the situation;
 5. Summary of corrective action taken or to be taken including date initiated and date completed or expected to be completed; and
 6. Any measures to prevent reoccurrence of such an incident.
- I. **Duty to Mitigate.**
You must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- J. **Proper Operation and Maintenance.**
You must at all times properly operate and maintain all facilities and systems of collection, treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.
- K. **Upset Conditions.**
1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Division Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.
 2. **Conditions necessary for a demonstration of upset.** A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required under *Part III.F, Twenty-four Hour Notice of Noncompliance Reporting*; and,
 - d. The permittee complied with any remedial measures required under *Part III.I, Duty to Mitigate*.
 3. **Burden of proof.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.
- L. **Removed Substances.**
Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment or system operations or maintenance work shall be properly disposed of in such a manner so

PART III
Permit No. UTG580000

Utah Sanitary Sewer Management Program General Permit

as to prevent any pollutant from entering any waters of the State or creating a health hazard. Filter backwash shall not directly enter either the final effluent or Waters of the State by any other direct route.

M. Industrial Pretreatment.

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of *The Water Quality Act of 1987*, the permittee shall allow the Publically Owned Treatment Works (POTW) owner accepting the wastewaters to enforce compliance with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the POTW accepting the wastewaters on all dischargers to the permittee's system.

In addition, the permittee must notify the POTW if he becomes aware that any illegal or toxic discharge to his sewer collection system has been made.

IV. GENERAL REQUIREMENTS

- A. Permit Actions.
This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- B. Duty to Reapply.
If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain authorization as required by the new permit once DWQ issues it.
- C. Duty to Provide Information.
You must furnish to DWQ within a reasonable time, any information which DWQ may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to DWQ or an authorized representative upon request, copies of records required to be kept by this permit.
- D. Other information.
Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division Director, you must promptly submit such facts or information.
- E. Signatory Requirements.
All applications, reports or information submitted to the Division Director shall be signed and certified.
 - 4. All permit applications shall be signed by either a principal executive officer or ranking elected official.
 - 5. All reports required by the permit and other information requested by the Division Director shall be signed and dated by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Division Director, and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
 - 6. Changes to authorization. If an authorization under paragraph *IV.F.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph *IV.F.2* must be submitted to the Division Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

7. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

F. Reporting Requirements.

1. Anticipated noncompliance. You must give advance notice to the DWQ of any planned changes in the permitted activity which may result in noncompliance with permit requirements.
2. Transfers. This permit is not transferable to any person except after notice to DWQ. Where an operator wants to transfer coverage under the permit to a new operator, the original permittee (the first operator) must submit a Notice of Termination pursuant to Part I.D.3. The new operator must submit a Notice of Intent in accordance with Part I.A.
3. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

G. Property Rights.

This permit does not convey any property rights of any sort, or any exclusive privileges.

H. Severability.

Invalidation of a portion of this permit does not render the whole permit invalid. DWQ's intent is that the permit will remain in effect to the extent possible; in the event that any part of this permit is invalidated, the remaining parts of the permit will remain in effect unless DWQ issues a written statement otherwise.

I. Transfers.

PART IV
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

This permit is not transferable to any person except after notice to DWQ. Where an operator wants to transfer coverage under the permit to a new operator, the original permittee (the first operator) must submit a Notice of Termination pursuant to Part I.C. The new operator must submit a Notice of Intent in accordance with Part I.A.

- J. Anticipated Noncompliance
The permittee shall give advance notice to the Division Director of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- K. Permit Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include appropriate entities and system restrictions and requirements as conditions may change.

V. DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

A. Definitions

1. "Act" means the "*Utah Water Quality Act*".
2. "Adverse Incident" – means an incident that you have observed upon inspection or of which you otherwise become aware, in which may cause a violation of the Utah Water Quality Act.
3. "Best Management Practices" (BMPs) – are examples of control measures that may be implemented to meet effluent limitations. These include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to minimize the discharge of pollutants to waters of the State BMPs also include treatment requirements, operating procedures, and practices to control spillage or leaks, waste disposal, or drainage from raw material storage. [40 CFR 122.2]
4. "BMP" - means "best management practice".
5. "CCTV" - means "closed circuit television.
6. "CIP" - means a "Capital Improvement Plan".
7. "CWA" means The *Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.
8. "Discharge" – when used without qualification, means the "discharge of a pollutant." [40 CFR 122.2]
9. "Discharge" of a pollutant – any addition of any "pollutant" or combination of pollutants to "waters of State" from any "point source," or any addition of any pollutant or combination of pollutants to the water of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation. This includes additions of pollutants into waters of the U.S. from: surface runoff that is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. [excerpted from 40 CFR 122.2]
10. "Division Director"- means the Director of the Utah Division of Water Quality.
11. "DWQ" - means "the Utah Division of Water Quality".
12. "DWQ" Approved or Established Total Maximum Daily Loads (TMDLs) – "DWQ Approved TMDLs" are those that are developed by a State and approved

by DWQ. "DWQ Established TMDLs" are those that are issued by DWQ.

13. "EPA" - means the United States Environmental Protection Agency.
14. "Establishment" – generally a single physical location where business is conducted or where services or industrial operations are performed (e.g., factory, mill, store, hotel, movie theater, mine, farm, airline terminal, sales office, warehouse, or central administrative office).
15. "Facility or Activity" – any NPDES "point source" (including land or appurtenances thereto) that is subject to regulation under the NPDES program. [40 CFR 122.2]
16. "Federal Facility" – any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned, operated, or leased by, or constructed or manufactured for the purpose of leasing to, the federal government.
17. "FOG" - means "fats, oils and grease".
18. "I/I" - means "infiltration and inflow".
19. "Impaired Water" (or "Water Quality Impaired Water" or "Water Quality Limited Segment") – A water is impaired for purposes of this permit if it has been identified by DWQ pursuant to Section 303(d) of the Clean Water Act as not meeting State water quality standards (these waters are called "water quality limited segments" under 40 CFR 130.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.
20. "North American Industry Classification System (NAICS)" – developed under the direction and guidance of the U.S. Office of Management and Budget (OMB) as the standard for use by Federal statistical agencies in classifying business establishments for the collection, tabulation, presentation, and analysis of statistical data describing the U.S. economy. NAICS is scheduled to be reviewed every 5 years for potential revisions with the most recent version being completed in 2007. Under NAICS, an establishment is generally a single physical location where business is conducted or where services or industrial operations are performed (e.g., factory, mill, store, hotel, movie theater, mine, farm, airline terminal, sales office, warehouse, or central administrative office). An enterprise, on the other hand, may consist of more than one location performing the same or different types of economic activities. Each establishment of that enterprise is assigned a NAICS code based on its own primary business activity. Ideally, the primary business activity of an establishment is determined by relative share of production costs and/or capital investment. In practice, other variables, such as revenue, value of shipments, or

employment, are used as proxies. For this permit, the U.S. Environmental Protection Agency uses revenue or value of shipments to determine an establishment's primary business activity. Details of NAICS are available on the Internet at <http://www.census.gov/eos/www/naics/index.html>.

21. "Optimize" – to make as effective, perfect, or useful as possible, to make the best use of.
22. "Person" – an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.
23. "Permittee" - means the federal and state agency, municipality, county, district, and other political subdivision of the state that owns or operates a sewer collection system or who is in direct responsible charge for operation and maintenance of the sewer collection system. When two separate federal and state agency, municipality, county, district, and other political subdivisions of the state are interconnected, each shall be considered a separate Permittee.
24. "SECAP" - means "System Evaluation and Capacity Assurance Plan".
25. "Sewer Collection System" - means a system for the collection and conveyance of wastewaters or sewage from domestic, industrial and commercial sources. The Sewer Collection System does not include sewer laterals under the ownership and control of an owner of real property, private sewer systems owned and operated by an owner of real property, and systems that collect and convey stormwater exclusively.
26. "SSGP" – means the "Sewer System General Permit".
27. "SORP" - means "Sewer Overflow Response Plan"
28. "SSMP" - means "Sewer System Management Plan".
29. "SSO" - means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.
30. "Class 1 SSO" (Significant SSO) - means a SSO or backup that is not caused by a private lateral obstruction or problem that:
 - a. effects more than five private structures;
 - b. affects one or more public, commercial or industrial structure(s);
 - c. may result in a public health risk to the general public;
 - d. has a spill volume that exceeds 5,000 gallons, excluding those in single private structures; or
 - e. discharges to waters of the State.

31. "Class 2 SSO" (Non Significant SSO) - means a SSO or backup that is not caused by a private lateral obstruction or problem that does not meet the Class 1 SSO criteria.
32. "Upset" - means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
33. "USMP" - means the "Utah Sewer Management Program".
34. "Water Quality Impaired" – See 'Impaired Water'.
35. "Water Quality Standards" – A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. Water quality standards also include an anti-degradation policy and implementation procedures. See P.U.D. o. 1 of Jefferson County et al v. Wash Dept of Ecology et al, 511 US 701, 705 (1994). States, Territories, Tribes and DWQ adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (See CWA sections 101(a)2 and 303(c)). Where necessary, DWQ has the authority to promulgate federal water quality standards.
36. "Wetlands" - means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. [40 CFR 122.2]
37. "You" and "Your" – as used in this permit are intended to refer to the permittee as the context indicates and that party's activities or responsibilities.
38. Abbreviations and Acronyms
 - BAT – Best Available Technology Economically Achievable
 - BMP – Best Management Practice
 - BPJ – Best Professional Judgment
 - BPT – Best Practicable Control Technology Currently Available
 - CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
 - CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
 - eNOI – electronic NOI system

PART V
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

DWQ --	U. S. Environmental Protection Agency
ESA --	Endangered Species Act
FWS --	U. S. Fish and Wildlife Service
NAICS --	North American Industry Classification System
NDWQ--	National Environmental Policy Act
NHPA --	National Historic Preservation Act
NMFS --	U. S. National Marine Fisheries Service
NOI --	Notice of Intent
NOT --	Notice of Termination
NPDES --	National Pollutant Discharge Elimination System
NRC --	National Response Center
NRHP --	National Register of Historic Places
ONRW --	Outstanding National Resource Water
SARA --	Superfund Amendments and Reauthorization Act
SHPO --	State Historic Preservation Officer
THPO --	Tribal Historic Preservation Officer
TMDL --	Total Maximum Daily Load
WQS --	Water Quality Standard

APPENDIX
Permit No. UTG580000
Utah Sanitary Sewer Management Program General Permit

APPENDIX

Physical Address: 195 North 1950 West (801) 536-4300

Notice of Intent (NOI) to Operate a Public Wastewater Collection System Under the General Permit No. UTC580000

Submission of this Notice of Intent constitutes notice that the party(s) identified in this form intends to be authorized by General Permit No. UTG580000 issued to Operate a Public Wastewater Collection System in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

NOI Submission Date: _____ General Permit Expiration Date: _____

Owner Entity Name (Permittee): _____ Phone: _____

Responsible Contact Person: _____ Phone: _____

Physical Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Email Address: _____

☐ Other: _____

- A map of the Entity service area showing collection lines and nearby water bodies, or;
- A description of the water bodies which could be impacted by releases from the subject wastewater collection system; as a minimum, county, nearest city, and major water body(s) below, the Water Body hydrologic unit code (HUC) if available, and latitude and longitude of any unnamed water body(s).

[illegible]

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that the applicant has sufficient title, right or interest in the property where the proposed activity occurs.

Signature:

Date:

Printed Signatory Name: (Person Responsible for, or Supervising operation of the subject Collection System)

Title:

Email Address:

This space for office use only:

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

FACT SHEET/STATEMENT OF BASIS

UTAH SANITARY SEWER MANAGEMENT PROGRAM GENERAL PERMIT
Permit Number UTG580000

Utah Division of Water Quality (DWQ), Sewer System General Permit (SSGP) for operation of a *public sanitary sewer* collection system in the State of Utah

INTRODUCTION AND BACKGROUND

Title 19-5-104 of the Utah Code gave the Water Quality Board (Board) the power and duty to:

“... develop programs for the prevention, control, and abatement of new or existing pollution of the waters of the state..”

“...order the director to issue, modify, or revoke orders:

(i) prohibiting or abating discharges;

(iv) requiring compliance with this chapter and with rules made under this chapter;

...advise, consult, and cooperate with other agencies of the state, the federal government, other states, or interstate agencies, or with affected groups, political subdivisions, or industries to further the purposes of this chapter; or...”

The Board has determined that the State will benefit from the development of a sanitary sewer collection system management program. Such a program will reduce sanitary sewer overflows (SSO) by giving added emphasis to the collection system maintenance, collection system analysis and program documentation.

Section 105 of the same Title limits the Board's rule making authority when administering a program under the federal Clean Water Act to be no more stringent than the corresponding federal regulation. Since there are no federal regulations dealing with collection system management, the Board has determined that this section is needed to protect the public health and the environment of the State.

Section 106 of that same Title indicates: “The director shall:

...develop programs for the prevention, control, and abatement of new or existing pollution of the waters of the state;

...advise, consult, and cooperate with other agencies of the state, the federal government, other states and interstate agencies, and with affected groups, political subdivisions, and industries in furtherance of the purposes of this chapter;”...

...subject to the provisions of this chapter, enforce rules made by the board through the issuance of orders, which orders may include:

(i) prohibiting or abating discharges of wastes into the waters of the state;...”

The Water Quality Board, recognizing the complexity of water quality management and the necessity to temper regulatory actions with the realities of technology and uncertainty, must act to protect the public from health hazards. Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the State. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO. A proactive approach that requires collection system operators to ensure a system-wide operation, maintenance, and management plan is in place that will minimize the number and frequency of SSOs within the state. This approach will, in turn, decrease the risk to human health and the environment caused by SSOs.

Major causes of SSOs include: grease blockages, root blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, excessive storm or ground water inflow/infiltration, debris blockages, sanitary sewer system age and construction material failures, lack of proper operation and maintenance, insufficient capacity and contractor-caused damages. Many SSOs are preventable with adequate and appropriate facilities, source control measures and operation and maintenance of the sanitary sewer system.

Consistent with the statutory requirement to develop programs which prevent control or abate pollution from reaching the waters of the state, the Utah Sanitary Sewer Management Program (USMP) is established.

All federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of Utah are required to comply with the terms of this program. Such entities are hereinafter referred to as "collection operators".

Other issues taken into consideration by the Board relative to the establishment of this sanitary sewer system management Program are:

Establishment of this Program is needed to provide uniform guidance to all collection operators. EPA has required the Division of Water Quality to inspect collection systems. Establishment of a detailed standard will allow all collection system operators a detailed understanding of inspection expectation.

Should national standards be developed which address any part of this program, this Program is automatically amended to comply with those national requirements.

These standards should be considered the minimum level all facilities should comply with. Collection operators may, at their option, establish more stringent requirements as their specific circumstances dictate.

APPROPRIATENESS OF THE GENERAL PERMIT

Utah Administrative Code (UAC) R317-8-2.5 authorizes the issuance of General Permits for categories of point sources within the same geographical area with discharges that are from similar types of operations and wastes, and that require similar effluent limitations and monitoring. In addition, *Utah Administrative Code (UAC) R317-801* will specifically address the requirements of this program. The purpose of this permit is to maintain water quality standards for waters of the State which may be affected by the operation of sanitary sewer collection systems. This permit is intended for collection system operators who own and/or operate public sanitary sewer collection systems.

WHO MUST OBTAIN COVERAGE UNDER THE SEWER SYSTEM GENERAL PERMIT (SSGP)

All owners or operators of public sanitary sewer collection systems must obtain coverage under this general permit. This permit does not apply to the owners/operators of private sanitary sewer collection systems or to any storm water collection systems.

WHEN TO SUBMIT A Notice of Intent (NOI)

All operators will automatically be covered under the Sewer System General Permit (SSGP) for the first five-year permit term of October 1, 2012 to September 30, 2016 if they submit a NOI on or before September 30, 2012. To obtain SSGP coverage for the second and all succeeding SSGP five-year terms, all operators must submit a NOI on or before the expiration date (September 30) in the last year of each of the SSGP five-year terms.

OTHER PERMIT CONDITIONS

This permit does not cover or satisfy the requirements for other programs which may require the permitting of these same, or affiliated facilities, like the UPDES surface water discharge individual or general permits, Construction Storm water or Industrial Storm water Permits.

THE NOTICE OF INTENT (APPLICATION FORM)

The application process for a general permit is less burdensome than for an individual UPDES permit. *Utah Administrative Code R317-8-2.5(2)(b)1* and *R317-8-3* allows streamlining of the application process for general permits by using Notices of Intent (NOIs) for applications. NOIs require minimal information, no previous water quality monitoring data and can be filled out and submitted in a short period of time. The information required should be readily available to the prospective permittee.

A blank copy of the NOI to obtain coverage under the SSGP may be found as an appendix to this document or it may be obtained online at www.waterquality.utah.gov. Because an original signature is needed on the submitted form, the copy must be filled out, signed and mailed or delivered to:

Mailing Address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

Physical Address:

Department of Environmental Quality
Division of Water Quality
195 North 1950 West
Salt Lake City, Utah 84116

Attn: Utah Sanitary Sewer Management Program Coordinator

THE SEWER SYSTEM GENERAL PERMIT (SSGP)

The requirements of the SSGP are as generally outlined below:

General Permit Provisions

1. Prohibitions
 - a. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the State is prohibited.
 - b. Any SSO that results in a discharge of untreated or partially treated wastewater that creates a health hazard, nuisance, or is a threat to the environment is prohibited.
2. General SSO Requirements
 - a. The permittee shall take all feasible steps to eliminate SSOs to include:
 - 1) properly managing, operating, and maintaining all parts of the sewer collection system;
 - 2) training system operators;
 - 3) allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,
 - 4) providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.
 - b. When a SSO occurs, the permittee shall take all feasible steps to:
 - 1) control, contain, or limit the volume of untreated or partially treated wastewater discharged;
 - 2) terminate the discharge;
 - 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,
 - 4) mitigate the impacts of the SSO.
3. General Permit SSO Reporting Requirements
 - a. SSO Reporting - SSOs shall be reported as follows:
 - 1) A Class 1 SSO shall be reported orally within 24 hrs and with a written report submitted to the DWQ within five calendar days as detailed below. Class 1 SSO's shall be included in the annual USMP report.
 - 2) Class 2 SSOs shall be reported on an annual basis in the USMP annual report.
4. Annual Report.
 - a. A permittee shall submit to DWQ a USMP annual operating report covering information for the previous calendar year by April 15 of the following year.

Sewer System Management Plan (SSMP) Requirements

1. SSMP. The permittee shall have and implement a written SSMP and shall make it available to DWQ upon request. A copy of the SSMP shall be publicly available at the permittee's office and/or available on the Internet. The SSMP must be publicly noticed by the permittee and approved by the permittee's governing body at a public meeting. The

main purpose of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur.

2. Contents of SSMP. The SSMP shall include:
 - a. Organization information,
 - b. Sewer collection system use ordinances, service agreements, or other legally binding methods for the program,
 - c. An Operations and Maintenance Plan,
 - d. Design and Performance provisions,
 - e. A Sewer Overflow Response Plan to protect public health and the environment,
 - f. For permittees with 2000 or more connections, and at the option of permittees with less than 2000 connections, a Fats, Oils and Grease (FOG) control plan consistent with the potential for FOG discharge from commercial and industrial dischargers,
 - g. For permittees with 2000 or more connections, and at the option of permittees with less than 2000 connections, a Sewer Evaluation and Capacity Assurance Plan (SECAP).

Certification, Submission and Implementation Requirements.

1. Timeline for Notice, SSMP, and Certification. The permittee shall certify to DWQ that a SSMP is in place that is in compliance with the USMP by submitting a notice to DWQ within the time frames identified in the following time schedule:

Table 1. Timeframe for Implementation.

Task	Completion Dates by Population			
	>50,000 population	15,001 to 50,000 population	3,501 to 15,000 population	3,500 and Less population
Notice of Intent to be covered by General Permit	2 weeks after submission of NOI to DWQ			
Completion of SSMP (excluding SECAP)	Sept 30, 2014	Mar 31, 2015	Sept 30, 2015	Mar 31, 2016
Completion of SECAP when required	Sept 30, 2015	Mar 31, 2016	Sept 30, 2016	Sept 30, 2017

Adverse Incident or Non-Compliance Documentation and Reporting

1. Twenty-Four (24) Hour Adverse Incident or Non-Compliance Notification
If you observe or are otherwise made aware of an adverse incident, that may have resulted from a discharge from your collection system, you must immediately notify the DWQ Incident Reporting line at (801) 536-4300, or 24-hour answering service (801) 536-4123. This notification must be made by telephone within 24 hours of you becoming aware of the adverse incident.
2. If you are unable to notify DWQ within 24 hours, you must do so as soon as possible and also provide your rationale for why you were unable to provide such notification within 24 hours.
3. Reporting of adverse incidents is not required under this permit in the following situations:
 - a. You are aware of facts that clearly establish that the adverse incident was not related to any administrative function or operation of your sewer collection system.
 - b. You have been notified in writing by DWQ that the reporting requirement has been waived for this incident or category of incidents.
 - c. You receive information notifying you of an adverse incident but that information is clearly erroneous.
4. Five (5) Day Adverse Incident or Non-Compliance Written Report. Within five (5) days of a reportable adverse incident pursuant to Part III.G.1, you must provide a written report of the adverse incident to the DWQ.

SSGP Annual Reporting Requirements

The SSGP does require permittees to submit an annual report summarizing your collection system activities, changes, improvements and all leaks, spills, fish kills or other "adverse incidents" or any other violation of the Utah Clean Water Act, even if they were earlier reported under the 24-hour verbal, and 5 day written report requirements.

PERMIT DURATION

It is the intention to issue the PGP for the duration of five years.

Drafted by
John Kennington P.E.
Utah Division of Water Quality
July 26, 2012

PUBLIC NOTICE

Began: XXXXX XX, 2012

Ended: XXXXX XX, 2012

Public Noticed in The Salt Lake Tribune and Deseret News

Comments:

Signed this XXth day of August, 2012.

John Kennington, Engineering Manager

Physical Address: 195 North 1950 West (801) 536-4300

**Notice of Intent (NOI) to Operate a Public Wastewater Collection System
Under General Permit No. UTG580000**

Submission of this Notice of Intent constitutes notice that the party(s) identified in this form intends to be authorized by General Permit No. UTG580000 issued to Operate a Public Wastewater Collection System in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

- A map of the Entity service area showing collection lines and nearby water bodies, or;
- A description of the water bodies which could be impacted by releases from the subject wastewater collection system; as a minimum, county, nearest city, and major water body(s) below, the Water Body hydrologic unit code (HUC) if available, and latitude and longitude of any unnamed water body(s).

[illegible]

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that the applicant has sufficient title, right or interest in the property where the proposed activity occurs.

Signature:

Date:

Printed Signatory Name: (Person Responsible for, or Supervising operation of the subject Collection System)

Title:

Email Address:

This space for office use only:

Providence City

Sanitary Sewer Management Plan

Introduction

Providence City is a public entity established in Utah under the Utah State Code. Providence City was established in 1859 and provides sewage collection to the citizens with the ability to also serve adjacent unincorporated area's. This Sewer System Management Plan (SSMP) manual has been established to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur. The Management for this entity recognizes the responsibility it has to operate the sewer system in an environmentally and fiscally responsible manner. As such, this manual will cover aspects of the collection system program necessary to provide such an operation. This manual may refer to other programs or ordinances and by reference may incorporate these programs into this manual.

Definitions

The following definitions are to be used in conjunction with those found in Utah Administrative Code R317. The following terms have the meaning as set forth:

- (1) "BMP" means "best management practice".
- (2) "CCTV" means "closed circuit television".
- (3) "CIP" means a "Capital Improvement Plan".
- (4) "DWQ" means "the Utah Division of Water Quality".
- (5) "FOG" means "fats, oils and grease". This is also referred to as a Grease Oil and Sand Program(GOSI).
- (6) "I/I" means "infiltration and inflow".

(7) "Permittee" means a federal or state agency, municipality, county, district, and other political subdivision [public entity] of the state that owns or operates a sewer collection system or who is in direct responsible charge for operation and maintenance of the sewer collection system. When two separate federal or state agency, municipality, county, district, and other political subdivision of the state are interconnected, each shall be considered a separate Permittee.

(8) "SECAP" means "System Evaluation and Capacity Assurance Plan".

(9) "Sewer Collection System" means a system for the collection and conveyance of wastewaters or sewage from domestic, industrial and commercial sources. The Sewer Collection System does not include sewer laterals under the ownership and control of an owner of real property, private sewer systems owned and operated by an owner of real property, and systems that collect and convey stormwater exclusively.

(10) "SORP" means "Sewer Overflow Response Plan"

(11) "SSMP" means "Sewer System Management Plan".

(12) "SSO" means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.

(13) "Class 1 SSO" (Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that:

(a) affects more than five private structures;

(b) affects one or more public, commercial or industrial structure(s);

(c) may result in a public health risk to the general public;

(d) has a spill volume that exceeds 5,000 gallons, excluding those in single private structures; or

(e) discharges to Waters of the State of Utah.

(14) "Class 2 SSO" (Non Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that does not meet the Class 1 SSO criteria.

(15) "USMP" means the "Utah Sewer Management Program".

General SSO Requirements

The following general requirements for SSO's are stipulated in R317-801 and are included here as general information.

1) The permittee shall take all feasible steps to eliminate SSOs to include:

(a) Properly managing, operating, and maintaining all parts of the sewer collection system;

(b) training system operators;

(c) allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,

(d) providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.

(2) SSOs shall be reported in accordance with the requirements below.

(3) When an SSO occurs, the permittee shall take all feasible steps to:

(a) control, contain, or limit the volume of untreated or partially treated wastewater discharged;

(b) terminate the discharge;

(c) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,

(d) mitigate the impacts of the SSO.

SSO Reporting Requirements

R317-801 stipulates when and how SSO's are reported. Following are those reporting requirements as of 04/23/2012.

SSO REPORTING. SSOs shall be reported as follows:

(1) A Class 1 SSO shall be reported orally within 24 hrs and with a written report submitted to the DWQ within five calendar days. Class 1 SSO's shall be included in the annual USMP report.

(2) Class 2 SSOs shall be reported on an annual basis in the USMP annual report.

ANNUAL REPORT. A permittee shall submit to DWQ a USMP annual operating report covering information for the previous calendar year by April 15 of the following year.

Sewer Use Ordinance

Providence City has a sewer use ordinance that has been adopted by the governing body. This ordinance contains the following items as stipulated by Utah State Code R317-801:

1. Prohibition on unauthorized discharges,
2. Requirement that sewers be constructed and maintained in accordance with R317-3,
3. Ensures access or easements for maintenance, inspections and repairs,
4. Has the ability to limit debris which obstruct or inhibit the flow in sewers such as foreign objects or grease and oil,
5. Requires compliance with pretreatment program. Allows for the inspection of industrial users, and
6. Provides for enforcement of for ordinance or rules violations.

The following elements are included in this SSMP:

- General Information
- Operations and Maintenance Program
- Sewer Design Standards
- Sanitary Sewer Overflow Response Plan
- Grease, Oil and Sand Interceptor Management Program
- System Evaluation and Capacity Assurance Plan
- SSMP Monitoring and Measurement Plan
- Sewer System Mapping Program
- Basement Backup Program [Optional]
- No Fault Sewage Backup Claims Program [Optional]

This program is intended to be a guidance document and is not intended to be part of a regulatory requirement. As such, failure to strictly comply with documentation requirements is, in and of themselves, not a failure of the program's effectiveness. Documentation failures are intended to be identified during system self-audits and will be addressed as training opportunities. Significant system failures will be followed up with corrective action plans. This corrective action process will be implemented by all individuals involved in the SSMP program. Not all Providence City employees will necessarily be involved in the collection system operations. As such, not all employees will receive program training. Finally, although not a part of this SSMP program, Providence City is an active participant in the Blue Stakes of Utah Utility Notification system. This system, regulated under title 54-8A of the Utah State Code, stipulates utility notification of all underground operators when excavation takes place. The intent of this regulation is to minimize damage to underground facilities. Providence City has a responsibility to mark their underground sewer facilities when notified an excavation is going to take place. Participation in the Blue Stakes program further enhances the protection of the collection system and reduces SSO's.

Providence City

SSMP – General Information

This Sanitary Sewer Management Plan was adopted by Providence City Municipal Council on Date of council meeting

The responsible representative(s), position and phone for SSMP is/are

Randy L. Eck Public Works Director 435 753 0313

Rob Stapley Sanitary Sewer Crew Chief 435 753 0313

Dan Wiser Sanitary Sewer Operator 435 753 0313

Gerald Taft Sanitary Sewer Operator 435 753 0313

City Engineer representative 435 752 8501

Description of Roles and Responsibilities

The following positions have the described responsibility for implementation and management of the specific measures as described in the SSMP.

Public Works Director

This individual is responsible for overall management of the sanitary sewer collection system. Responsibilities include working with governance to assure sufficient budget is allocated to implement the SSMP, maintenance of the SSMP documentation, development of a capital improvement program and general supervision of all staff.

Sanitary Sewer Crew Chief

This individual is responsible for daily implementation of the SSMP. This includes maintenance activities, compliance with SORP requirements, and monitoring and measurement reporting requirements.

Public Works Director/Sanitary Sewer Crew Chief

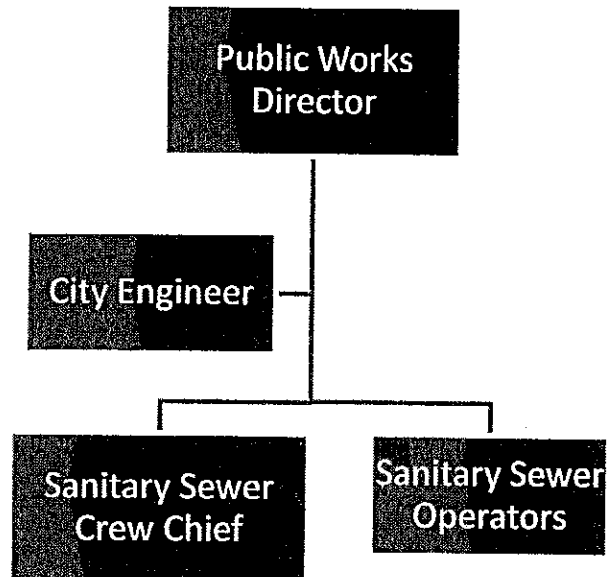
This individual is responsible for implementation of the pretreatment program including the fats oil and grease program.

City Engineer

This individual is responsible for the development and maintenance of collection system design standards, maintenance of collection system mapping and maintenance of the SECAP program.

Organization Chart

Below is the organization chart associated with the SSMP [this could be a large chart or just one person depending on organization size]:



Providence City

Operations and Maintenance Program

Providence City has established this sanitary sewer system operations and maintenance program to ensure proper system operations, to minimize any basement backups or SSOs, and to provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined maintenance program should insure that the environment and health of the public are protected at a reasonable cost for the end users. To this end, the following areas are described and included in this maintenance program:

- System Mapping
- System Cleaning
- System CCTV Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

System Mapping

An up to date map is essential for effective system operations. Providence City has assigned the mapping responsibility to the Public Works Director/City Engineer who will prepare and maintain current mapping for the entire sanitary sewer system. Mapping may be maintained on either paper or in a graphical information system (GIS) or a combination of both. Current mapping is available at the following locations:

Providence City Public Works Office
Providence City Public Works Facility
Skyline AES Corporate Offices

Should any employee identify an error in the mapping, they should document the error on a defect report and give it to the Public Works Director/Sanitary Crew Chief.

System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods. Providence City has established a goal to clean the entire system every Seven (7) years. Based on experience over the past 20 years, this frequency significantly reduces the number of basement backups, controls grease problems and flushes any bellies in

the system. In addition Providence City has a listing of identified hot spots which are maintained at a higher frequency. Systems which may have roots are mechanically rodded or hydraulically cut out and areas where restaurants are close together are hydraulically flushed with a high pressure jet truck. The following methods are employed to provide system cleaning:

Providence City Hydraulic Cleaning
Providence City Mechanical Rodding.
Chemical Root Control
Chemical FOG Control

Cleaning records are maintained at Providence City Offices. Contractors are required to provide cleaning records associated with their work. Cleaning history may also be entered into the GIS; however, this is not always necessary. Should the cleaning process identify a serious defect, the problem should be reported on a Defect Report Form. The Sanitary Sewer Crew Chief should be given the defect reports for further action. The defect report should be specific as to location and type of problem. A copy of the Defect Report Form is included at the end of this narrative section. A summary of cleaning activities shall be prepared annually by the Sanitary Sewer Crew Chief or designee. This summary will normally be presented to the Public Works Director.

System CCTV Inspection

Closed Circuit TV inspections of the sanitary sewer system are used to assess pipe condition and identify problems or possible future failures which need current attention. The CCTV process also identifies the piping condition to allow for replacement prior to failure. Generally, Providence City will conduct CCTV inspection with it's own staff. Inspections of the system will occur every 10 to 15 years, with trouble area's when needed. This inspection frequency is based on the pipe aging process. As such, once the system has been inspected completely, change usually occurs gradually. CCTV will also be employed when a systems operation or capacity is questioned or when an SSO occurs. Any defects identified during the CCTV process should be reported on a Defect Report Form and the form should be given to the Sanitary Sewer Crew Chief for possible repairs. Documentation of CCTV activities will be maintained at The Public Works Directors office and in the CCTV trailer. When contractors are employed to inspect the sanitary sewer system they will be required to submit records for their work. The Sanitary Sewer Crew Chief will prepare an annual summary of CCTV completed for that calendar year.

Manhole Inspection

Providence City schedules annual inspection of the sanitary sewer manholes (M/H). The M/H inspection involves the identification of foreign objects and surcharging that may be present. Crews inspecting the manholes will be given maps by the Sanitary Sewer Crew Chief who will monitor the progress and completeness of the inspection process. When a potential defect is identified the manhole should be flagged. Flagged manholes should be checked by an operator within several days to determine further action. If, during the inspection process, the inspection crew believes a problem is imminent, they should immediately cease inspecting and inform the Sanitary Sewer Crew Chief of the problem. A cleaning crew should be dispatched immediately to ensure correct system operations. All inspection records should be retained for documentation of work performed.

Defect Reporting

Defect Reports generated through the cleaning, CCTV inspection or manhole inspection programs will be prioritized for correction by the operators. Any defects which have the potential for catastrophic failure and thus create a sanitary sewer overflow should be evaluated immediately and discussed with the Sanitary Sewer Crew Chief for repair. Repair methods may include:

- Spot Excavation Repairs
- Spot Band Repairs
- Segment Excavation Replacements
- Segment Lining
- Manhole Rehabilitation

When a defect is not flagged for immediate repair, it should be considered for placement on the "hot spot" list. This will allow for vigilant maintenance to ensure failure and a subsequent sanitary sewer overflow do not take place. Defect reports should be used in the Budget process to determine what financial allocation should be made in the next Budget year. The Sanitary Sewer Crew Chief should include outstanding defects in the annual report.

Collection System Damage

Collection damage may occur as a result of multiple factors, some identified as a result

of inspection activities and some identified as a result of damage by third parties such as contractors.

Damage Identification

The identification of system damage which may result in an SSO or basement backup is important to prevent environmental, public health, or economic harm. Identification of damage may be from either internal activities or external activities.

Internal activities which may result in the identification of damage include the following:

1. Collections Maintenance Activities
2. CCTV Inspection Activities
3. Manhole Inspection Activities

These three activities are discussed in this Maintenance Program and the identification of damage will result in the generation of a Defect Report. Generally, damage identification is an iterative and continuous process.

External activities which identify damages include:

1. Contractor Notification of Damage
2. Directional Drilling Notification of Damage
3. Public Damage Complaints

All three of these notifications generally require immediate response. Staff should respond and evaluate the seriousness of the damage and the effect on the environment. Damages which include a release to the environment should be handled in accordance with the SORP. Damages which cause a basement backup should trigger the Basement Backup program. Damages which remain in the trench should be de minimis and do not require more action than the repair of the damage.

Whatever the cause of collection system damage, the response should be expeditious to prevent environmental or economic harm. Public Works staff should consider all damages an emergency until it is shown by inspection to be a lower priority.

Damage Response Actions

When damages occur in the collection system, the following actions help define the path staff should take. These action plans are not inclusive of all options available but are indicative of the types of response that may be taken.

Stable Damage

Inspection activities may show a system damage which has been there for an extended period of time. Such damage may not require immediate action but may be postponed for a period of time. When stable damage is identified and not acted upon immediately, a defect report should be prepared. If such a defect is identified and repaired immediately, a defect report is not needed. An example of stable damage could be a major crack in a pipeline or a severely misaligned lateral connection where infiltration is occurring.

Unstable Damage

Unstable damage is damage which has a high likely hood that failure will occur in the near future. Such damage may be a broken pipe with exposed soil or a line which has complete crown corrosion. In these cases, action should be taken as soon as there is time, a contractor, materials and other necessary resources are available. When such unstable damage is identified, if possible, consideration should be given to trenchless repairs which may be able to be completed quicker than standard excavation. Immediately after identification the Public Works Director should be contacted to review and take care of budget considerations.

Immediate Damage

When a contractor or others damage a collection line such that the line is no longer capable of functioning as a sewer, this immediate damage must be handled expeditiously. Such damage allows untreated wastewater to pool in the excavation site, spill into the environment or possibly backup into a basement. Under such conditions priority should be given to an immediate repair. Since excavation damage may be a result of contractor negligence or it could be a failure of Providence City to adequately protect the line by appropriately following the Damages to Underground Utilities

Statute 54-8A, priority should be given to effecting a repair and not to determining the eventual responsible party.

As can be determined from the above action plans, priority should always be preventing SSO's and attendant environmental damage, to prevent basement backups and financial impacts, and to prevent public health issues.

Providence City Sanitary Sewer System Defect Report

Date: _____

Time: _____

Location of Defect: _____

Identified by: _____

Description of Defect: _____

Urgency of Needed Corrective Action:

Immediate Action Required:

☐

Repair or Correct Soon:

☐

Problem Stable:

☐

No Immediate Action Needed:

☐

Recommended Remedial Action: _____

Providence City

Sewer Design Standards

Included [or by reference] in this section are the sanitary sewer design standards for Providence City. These design standards are intended to be used in conjunction with Utah Administrative Code R317-3. Where a conflict exists between these two standards, the Administrative Code shall prevail.

Please refer to the Providence City Standard and Specifications Manual, section V, and related drawings for design standards.

Providence City

Sanitary Sewer Overflow Action Plan

Whenever sanitary sewage leave the confines of the piping system, immediate action is necessary to prevent environmental, public health or financial damage from occurring. In addition, quick action is normally needed to mitigate damage which may have already occurred. For the purpose of this section, the following are part of the emergency action plan.

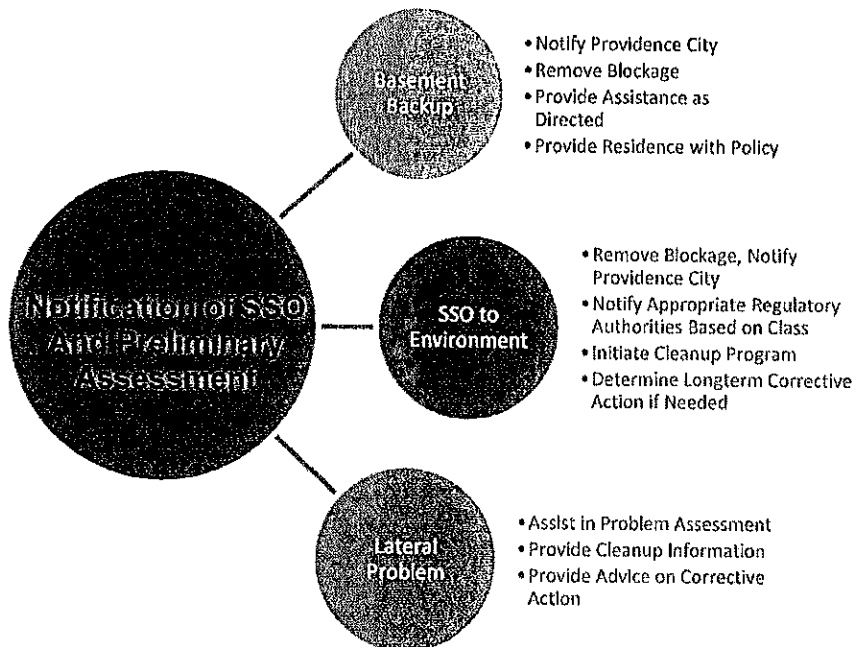
1. Basement backups
2. Sanitary sewer overflows
3. Sanitary sewer breaks which remain in the trench
4. Sewer lateral backups

All of the above conditions are likely to cause some damage. Each should be treated as an emergency, and corrective actions taken in accordance with Providence City directions. Items 1 & 2 above should be reported immediately based on whether they constitute a Class 1 or Class 2 SSO. As stated in the definition section of the SSMP Introduction, a Class 1 SSO is an overflow which affects more than five private structures; affects a public, commercial or industrial structure; results in a significant public health risk; has a spill volume more than 5,000 gallons; or has reached Waters of the State. All other overflows are Class 2 SSO's. All Class 1 SSO's should be reported immediately. Class 2 SSO's should be documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the State. Item 3 may be reported to the local health department if, in the opinion of the responsible staff member there is potential for a public health issue. An example of where a public health issue may be present is when an excavator breaks both a sewer and a water line in the same trench. In such cases, the local health department representatives should be contacted and the situation explained. If the health representative requests further action on the part of the city, staff should try and comply. If, in the opinion of the responsible staff member, the health department request is unreasonable, The Public Works Director should be immediately notified. Care should always be taken to err on the side of protecting public health over financial considerations. When a basement backup occurs, the staff member responding should follow the Basement Backup Program procedures. Lateral backups, while the responsibility of the property owner,

should also be treated as serious problems. Care should be taken to provide advice to the property owner in such cases, but the property owner is ultimately the decision maker about what actions should be taken.

Response Activities

There are specific steps that should be followed once a notification is received that an overflow may be occurring. The following figure outlines actions that could be taken when the city receives notice that a possible overflow has or is occurring.



General Notification Procedure

When a Class 1 SSO occurs specific notification requirement are needed. In such cases the following Notification procedure should be followed and documented. Failure to comply with notification requirements is a violation of R317-801.

Agency Notification Requirements

Both the State of Utah Division of Water Quality and the local health department should be immediately notified when an overflow is occurring. Others that may require notification include local water suppliers, affected property owners and notification may

be required to Utah Division of Emergency Response and Remediation if hazardous materials are involved. The initial notification must be given within 24 hours. However, attempts should be made to notify them as soon as possible so they can observe the problem and the extent of the issue while the problem is happening. A notification form is provided to document notification activities. After an SSO has taken place and the cleanup has been done, a written report of the event should be submitted to the State DEQ within five days (unless waived). This report should be specific and should be inclusive of all work completed. If possible the report should also include a description of follow-up actions such as modeling or problem corrections that has or will take place.

Public Notification

When an SSO occurs and the extent of the overflow is significant and the damage cannot be contained, the public may be notified through proper communication channels. Normally the local health department will coordinate such notification. Should Providence City need to provide notification it could include press releases to the local news agencies, publication in an area paper, and leaflets delivered to home owners or citizens in the area of the SSO. Notification should be sufficient to insure that the public health is protected. When and if Federal laws are passed concerning notification requirements, these legal requirements are incorporated by reference in this document. In general, notification requirements should increase as the extent of the overflow increases.

Overflow Cleanup

When an overflow happens, care should be taken to clean up the environment to the extent feasible based on technology, good science and financial capabilities. Cleanup could include removal of contaminated water and soil saturated with wastewater and toilet paper, disinfection of standing water with environmentally adequate chemicals or partitioning of the affected area from the public until natural soil microbes reduce the hazard. Cleanup is usually specific to the affected area and may differ from season to season. As such, this guide does not include specific details about cleanup. The responsible staff member in conjunction with the State DEQ, the local health department and the owner of real property should direct activities in such a manner that they are all satisfied with the overall outcomes. If, during the cleaning process, the responsible staff member believes the State or the County is requesting excessive actions, the Public Works Director should be contacted.

Corrective Action

All SSO's should be followed up with an analysis as to cause and possible corrective actions. An SSO which is the result of grease or root plug may be placed on the preventative maintenance list for more frequent cleaning. Serious or repetitive plugging problems may require the reconstruction of the sewer lines. An overflow that results from inadequate capacity should be followed by additional system modeling and either flow reduction or capacity increase. If a significant or unusual weather condition caused flooding which was introduced to the sanitary sewer system incorrectly, the corrective action may include working with other agencies to try and rectify the cross connection from the storm sewer to the sanitary sewer or from home drainage systems and sump pumps. Finally, should a problem be such that it is not anticipated to reoccur, no further action may be needed.

Providence City

Grease, Oil and Sand Management Program

Purpose:

The purpose of this program is to provide for the control and management of grease, oil and sand discharges to the cities collection system. This program will provide a means to reduce interference with the collection system operation and pass through at the treatment plant.

Regulatory Authority:

Regulatory authority to implement this program is found in the Code of Federal Regulations in 40 CFR 403, General Pretreatment Regulations. State authority for the program is given in the Utah Administrative Code R317-8-8, Pretreatment. Local Authority is found in _____.

Program Implementation:

This program shall be implemented in such a manner as to minimize the impact on businesses which may be affected by this program. In all cases Providence City will maintain a uniform decision making process. Providence City shall allow for appeals of program requirements in accordance with the appeal process approved by [public entity].

The following steps detail the procedure that Providence City personnel shall follow in implementing this program.

Evaluation:

Providence City staff will evaluate an industrial user (IU) discharge to determine if grease, oil or sand management is required at the following

events:

1. Issuance of a construction or remodeling building permit.
2. When the collection line in front of the business is CCTV inspected as part of the sanitary sewer system preventative maintenance program.
3. When a downstream sanitary sewer pipeline plugs due to oil, grease or sand.

No further action will be taken if it is determined that no potential exists for significant enrichment of the wastewater with grease, oil or sand.

Enrichment is defined as a discharge with greater volume or concentration of grease, oil or sand than that discharged from a typical residential connection. For oil and grease, the typical residential discharge has less than 100 mg/L of oil and grease for any sample taken. Greater concentrations would be enrichment. Also, a significant buildup of oil and grease in the lateral would indicate enrichment. Sand and dirt is not typically discharged from a residential connection. Any potential for sand or dirt discharge would be enrichment.

Implementation:

IU's which are determined to enrich or have the potential to enrich the wastewater with grease, oil, or sand will be required to develop a management plan in accordance with the following tracks.

TRACK 1

This track is available for IU's which exist at the time of program implementation. However, not all existing IU's may be permitted to use it. Determination will be made on a case by case basis. IU's on this track will be permitted to either

pay a contractor to clean the main sewer line from their place of business to the nearest trunk line. A trunk line is any sewer line which has an inside diameter of eight inches or larger or has been classified as a trunk line by Providence City. Cleaning frequency will be determined by inspections performed by Providence City.

TRACK 2

This track requires the IU to install and maintain a grease, oil and/or sand trap on their premises. Quarterly cleaning reports may be required at the discretion Logan City. Logan City shall inspect and test the grease trap on a periodic basis. The following fees shall apply:

Inspection Fee	\$XX.00
Testing Fee	\$XX.00

Should the testing reveal grease and oil in excess of 100 mg/L, a fine of \$X.XX for each pound of oil and grease discharged for the past reporting period shall be assessed. The pounds of grease and oil shall be determined by using the following equation:

$$(\text{Total Reporting Period water use in MG})(\text{mg/L O\&G} - 100)(8.34)$$

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 100 mg/L oil and

grease limit, enforcement will be escalated in accordance with the Logan City Enforcement Response Plan. In addition, an entity which is frequently violating the 100 mg/L limit may be issued a pretreatment permit in order to further regulate the IU.

Should the testing reveal TSS in excess of 250 mg/L, a fine of \$X.XX for each pound of TSS discharged for the past reporting period shall be assessed. The pounds of TSS shall be determined by using the following equation:

$$(\text{Total Reporting Period water use in MG})(\text{mg/L TSS} - 250)(8.34)$$

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 250 mg/L TSS surcharge limit, the IU will be placed on a continuous inspection, testing and the surcharge schedule for TSS.

By following the steps discussed above, Providence City hopes to maintain a collection system free from excessive backups and a treatment plant in compliance with UPDES discharge conditions.

List of Acceptable Entities That Recycle Oil and Grease

The following list of grease and oil recyclers should be given to all IU's who operate a grease trap. This list may not be all inclusive. Other recyclers may be used if it can be shown that they discharge of the waste appropriately.

Recycler	Phone Number	Address
Renegade Oil	801-973-7912	1141 S. 3200 W, SLC, Utah 84104

Providence City

System Evaluation and Capacity Assurance Plan

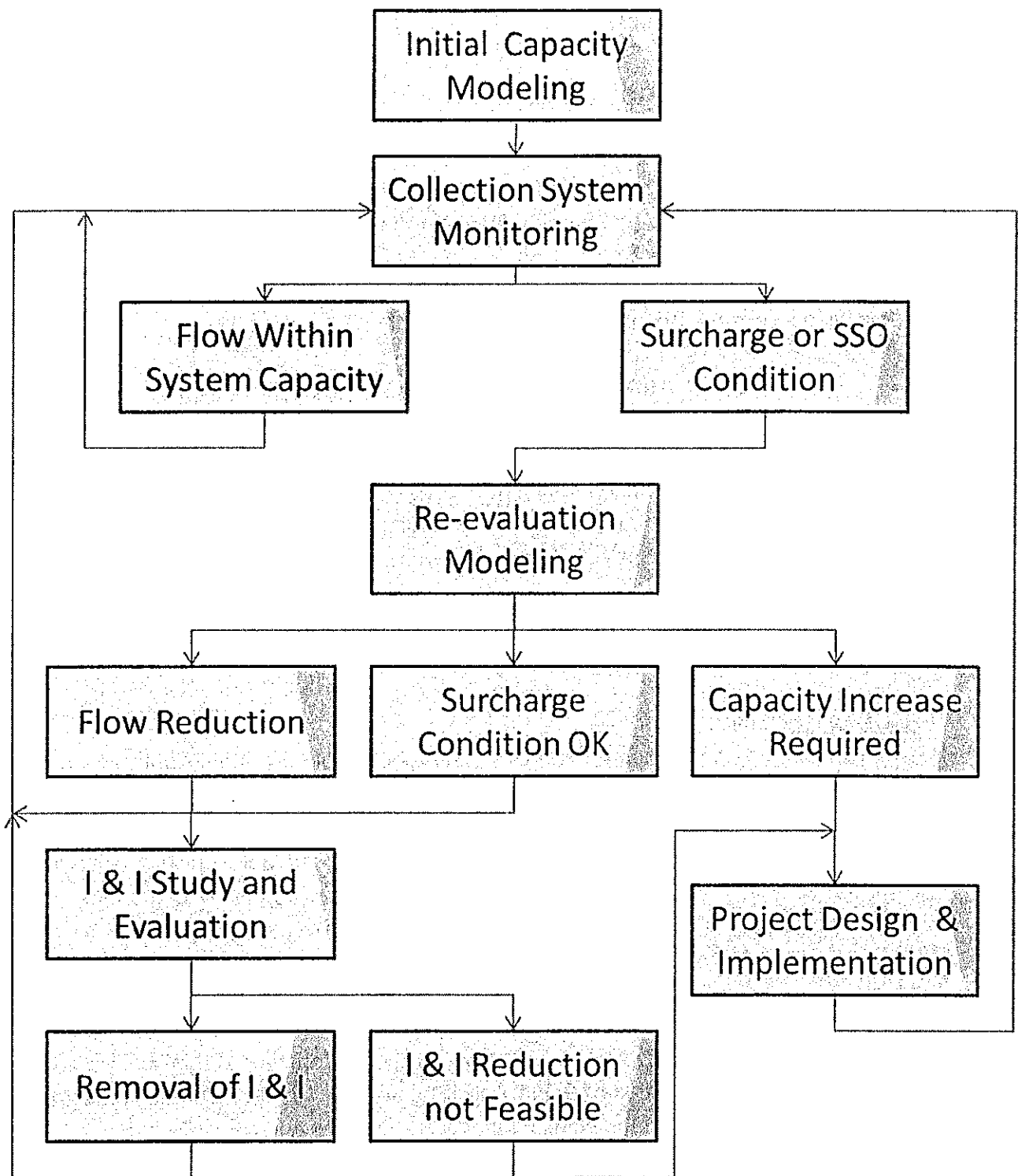
Providence City believes that one of the keys to preventing sanitary sewer overflows is to evaluate system capacity and to monitor flows throughout the system in order to ensure that capacities are not exceeded. Should a collection sub-system exceed the capacity of the pipes, the system will be immediately re-evaluated and corrective action taken. The following elements are all part of Providence City SECAP program.

1. Initial Capacity Modeling and Master Planning
2. Flow Monitoring
3. Surcharge Flow Analysis
4. Re-evaluation Modeling and Analysis
5. Flow Reduction Evaluation and Implementation
6. Capacity Increase Evaluation and Implementation

The actual implementation process associated with each of the elements above is shown in figure on the next page. This flow chart process forms the backbone of the SECAP.

Initial Capacity Evaluation

Providence City has performed an analysis and modeling of each critical subsystem contained within its collection system. Subsystems are segregated based on the branching of the collection system. Trunk lines and collector lines are evaluated until the system reaches a point where less than 400 residential dwelling unit equivalents (RE) are upstream of that point in the system. The 400 RE point was chosen based on the minimum slope requirements of the State of Utah. An 8-inch pipe constructed on minimum slope will carry the flow from 400 RE based on 3.2 persons per dwelling unit, 75 gpcd and a peaking factor of 4. The RE equivalent is based typical Utah information and assumes the peaking factor will account for a reasonable amount of inflow and infiltration. If an area is known to have, or flow metering identifies, a significant amount of inflow and infiltration, additional evaluation will be needed. In these areas the capacity of an 8-inch pipe system may be significantly reduced below 400 RE.



SECAP Flow Chart

In addition to developing an equivalent flow for a residential unit, consideration should also be given to time of concentration in the collection system. Based on typical diurnal flow patterns, if the transit time in the branch system is less than 2 hours, time of concentration can be ignored.

Flow Monitoring

Flow monitoring is done on a monthly basis, derived from flow data that is acquired from Logan City in the monthly billing sheet. Portable monitoring devices may be used to determine flows in specific area's of the system when needed.

Surcharge Flow Analysis

If any collection subsystem is identified as having any of the following problems the system will be evaluated to determine future action. These problems are:

1. Sanitary Sewer Overflow to the Environment
2. Sanitary Sewer Break Remaining in the Trench
3. Basement Backup
4. Observed Subsystem Surcharging.

The flow evaluation may result in multiple conclusions, some of which may require further action. Possible conclusions and their further action are listed below. This list is not inclusive nor does it require the specific action detailed. These are given as possible examples and will be used by the [responsible position] to determine correct future action.

Flow Reduction Evaluation

Should excessive flows be identified during the surcharge analysis, the solution may be to proceed with an inflow and infiltration study with the ultimate goal of reducing flows. These flow reductions may be achieved by reconstruction of specific areas, internal spot repairs, removing illegal storm water or sump pump connections from homes or storm water systems, and system grouting. Tools used in flow reduction may include extensive in line camera inspection, smoke testing, dye testing, and increased inspection or flow monitoring.

Foreign Objects or Obstructions

There are multiple foreign objects which may be found in sewers. These may include objects knocked into sewers during construction, illegally placed in sewer

manholes, roots, grease and soaps, bellies in piping systems, etc. Each of these problems should be found during the backup investigation and a plan developed to insure the problem does not reoccur. Types of action may include increased cleaning frequency, spot repairs, greater pretreatment activity, lining of pipes, and other corrective actions which resolve the problem.

Allowable Surcharging

Some piping systems may be able to accept surcharges without creating problems. Such systems may be deep and surcharging occurs below the level of basements or manhole rims, or they may be in areas where there are no connections. In such cases the resolution of the observed surcharge may just be additional monitoring.

Revised System Modeling

Where piping system problems cannot be resolved in a less expensive way, the system may be further modeled to determine upgrade needs. Modeling should include known flow information and future projections. Since the system has been shown to have problems, further modeling should be more conservative in flow projections. Revised modeling should follow the guides given next.

Re-evaluation Modeling and Analysis

When a subsystem demonstrate unresolvable problems by less costly means, the subsystem should be re-modeled and required action determined. Revised modeling may show that flow reduction may still be viable or it may show that the system can allow current surcharge conditions. Most likely, however, the modeling will normally form the basis for construction to enlarge the subsystem capacity. Modeling should be done either by

1. Providence City staff using commercially available software
2. Engineering staff using spreadsheet models
3. Engineering firms using available software or spreadsheets.

It is important to insure the modeling is comprehensive and includes all the potential flow sources. While the current area zoning and land use planning should be used in the model development, care should be taken to discuss possible changes with appropriate officials. Where possible zoning changes appear likely, the model should be re-run with the revised zoning alternatives. Once a resolution has been selected, the resulting

project should be placed on the capital improvement plan (CIP).

Capacity Increase Evaluation and Implementation

The capacity evaluation should be expedited based on the impact of the problem on the environment and the possible repeat of the overflow/backup/surcharging. Details on prioritization are given in the next section.

Systems requiring additional capacity should be engineered for expansion by qualified staff or engineering consultants. Project design should be based on acceptable engineering standards and should comply with State of Utah regulations found in R317-3. Easements should be obtained, where needed and the design should include an analysis of other utilities in the vicinity. Design review should be done by the applicable regulatory agency, as appropriate. A design report should be prepared for each project. Where appropriate, the subsystem modeling may be substituted for the design report.

Finalized projects should be placed on the CIP.

System Improvement Prioritization

The priority for improvement should follow the following general guidelines:

High Priority Projects

When there is significant potential for sanitary sewer overflows, or frequent basement backups, the improvement should be considered a high priority and any available budget should be allocated to the project.

Medium Priority Projects

Where the problem is infrequent and the possibility exists that it may not repeat in the near future, the priority for correction is medium. Medium priority projects may be delayed until appropriate budget is available or the priority is adjusted to high priority. Should an SSO or basement backup repeat in the same area, the priority should be immediately revised.

Low Priority Projects

If the observed problem is infrequent, there is possibility that it may not repeat in the near future and the possibility that increased flow in the subsystem is low, the correct priority is low. Low priority projects will be placed in the budget process

and evaluated against other needs. These projects will eventually be completed, but the work is not prioritized above plant and equipment needs.

Capital Improvement Plan

The CIP is part of Providence City budgeting process to insure sufficient revenue to address identified weaknesses in the sanitary sewer system. Items which have been identified as needing a structural fix are placed on the CIP list and the cost for each estimated. Sources of funding should be identified for all high priority projects so that SSO's or other failures do not re-occur. Forecasts of available funding for medium and low priority projects should be made to facilitate future revenue needs.

Providence City

SSMP Monitoring and Measurement Plan

The purpose of this plan is to provide appropriate monitoring and measurement of the effectiveness of the SSMP in its entirety.

Records Maintenance

Providence City intends to maintain appropriate records on operations and maintenance of the sanitary sewer system to validate compliance with this SSMP. However, failure to meet standards set by State DWQ or other regulatory agency during an inspection does not constitute a violation of the SSMP. Rather, deficiencies identified during inspections should be viewed as an opportunity for improvement.

Operations Records

Operations records that should be maintained include the following:

- Daily cleaning records
- CCTV inspections records
- Manhole inspection records
- Hot spot maintenance list
- Spot repairs
- Major repairs
- System capacity information
- SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.)
- Capital Improvement Plan

Records will be maintained by the city in a central location. Records may be maintained either on an electronic record or as a paper record. The extent of the record should be sufficient to demonstrate the activity recorded was completed appropriately.

Performance Measurement (Internal Audit)

Periodically, but not less than annually, Providence City should assess and audit the effectiveness of the elements of this SSMP. All elements should be reviewed for effectiveness as well as all records should be reviewed for completeness. An internal audit report should be prepared preferably annually but no less than once every five years which comments on the following:

- Success of the operations and maintenance program
- Success of other SSMP elements

- Adequacy of the SECAP evaluations
- Discussion of SSO's and the effectiveness of the response to the event including corrective action
- Review of Defect reports and adequacy of response to eliminate such defects
- Opportunities for improvement in the SSMP or in SSO response and remediation

The annual audit report need not be extensive or long. It should, however be sufficient to document compliance with the standards set in the SSMP. The audit reports should be maintained in accordance with Providence City records retention schedule.

SSMP Updates

When a plan deficiency is identified through an audit, inspection or plan review, and the deficiency requires an SSMP update, the plan may be updated at the discretion of the Public Works Director. SSMP updates should be recorded in a revision index maintained by the Public Works Director.

SSO Evaluation and Analysis

At least annually in the internal audit and more frequently as needed, Providence City will evaluate SSO trends based on frequency, location and volume. Trend evaluation will be empirical unless a large number occur sufficient to make a statistical analysis viable. If a trend is identified, a corrective action may be appropriate.

Public Communication and Outreach

Providence City will reach out to the public about the development, implementation and performance of the SSMP. This communication may be accomplished by any of the following methods:

- Public hearings
- Public meetings
- Newsletters
- Direct mailing
- Leaflets
- Other effective methods

Providence City will accept comments, either written or verbal and will review such comments for applicability. Public interest may be difficult to generate, but should be sought, non-the-less.

Providence City

Basement Backup Program

Basement backups are a serious impact on a home or business owner. As such, all reasonable efforts should be taken to prevent such backups from occurring. Sewer system backups are the result of several system problems. Such problems include any one or a combination of the following:

1. Laterals serving real properties are owned by the property owner and lateral maintenance is their responsibility. Roots, low points, structural failure, and grease are primary problems lateral owners face.
2. Backups caused by main line plugs are usually caused by roots, grease, low points, foreign objects and contractor negligence.
3. Piping system structural damage may cause basement backups. Such structural problems include age or deterioration damage, installation damage, excavation damage and trenchless technology damage.
4. Excess flow problems may surcharge a piping system and cause backups into homes. Excess flows usually occur when major storm waters inflow into sanitary sewers. Sanitary sewers are not designed for such flow. In addition, some homeowners may illegally connect foundation drains and sump pumps to the sanitary sewer system.

Basement Backup Response

When Providence City is notified about a basement backup, staff will log the complaint in a complaint log. The person receiving the call may log the backup complaint or may ask administrative staff to document the complaint.

All backup complaints shall be investigated by Public Works staff. If the investigation

determines that the cause of the backup is only in the lateral, staff may offer technical information but should not take responsibility for cleanup or subsequent restoration.

When it is determined that the basement backup is the result of a mainline problem, Providence City will follow the policy approved by its governing authority. A copy of this policy should be given to the home owner. It should be noted that all action Providence City takes are on a no-fault basis. Providence City does not accept liability nor does it waive its governmental immunity.

Backup Prevention Design Standard

Providence City promotes system designs which minimize backups and insure proper operations. To this end Providence City has a design standard for all system construction. In addition, Providence City complies with state design standards contained in R317-3. Finally for laterals, the following policy applies:

Policy on the Installation of Backflow Valves

Reference Regulatory Documents:

The following regulations are referenced in the establishment of this policy:

- Utah Code Title 15A-2-103(c). This code section adopts the 2009 edition of the International Plumbing Code.
- The 2009 International Plumbing Code, section 715 Sewage Backflow.

Providence City Policy:

- The State of Utah has adopted the International Plumbing Code(IPC) as its plumbing building standard;
- Providence City use the IPC as their statute for plumbing construction and installation;
- And the IPC requires the installation of a sewage backwater valve "where the overflow rim of the lowest plumbing fixtures are below the next upstream manhole in the public sewer."

Therefore, for new construction, Providence City requires the installation of backwater valves as stipulated by the IPC already propagated for all new construction.

Providence City

No-Fault Sewage Backup Claims Program

The purpose of this program is to assist in the cleanup of real and personal property, and/or compensate persons for the loss of real or personal property, destroyed or damaged as the result of a backup of Providence City facilities, regardless of fault, within the restrictions, limitations and other provisions of this policy.

Cleanup of Real and Personal Property:

- (A) The Public Works Director may, in accordance with the Providence City standard procurement procedures, engage the services of one or more cleanup contractors to perform cleanup services at the direction of the City Administrator on an as-needed basis.
- (B) Upon discovering backup described in this Policy, a property owner should immediately notify the city of such event.
- (C) Upon notification of the occurrence of the event, the Public Works Director may contact a cleanup contractor under contract with the city pursuant to subsection (A) above, and direct the cleanup contractor to perform all cleanup work at the premises, in accordance with established cleanup criteria.
- (D) In the event the property owner engages the services of a cleanup contractor prior to notifying the Public Works Director of the event, the city may reimburse the property owner for actual expenses incurred by the property owner, but only up to the amount the city would have paid its own cleanup contractor under subsection (C) above.
- (E) In the event any real or personal property cannot, in the reasonable judgment of the city be restored to its pre-event condition, in accordance with the cleanup criteria, the city may pay to the property owner the estimated fair market value (not the replacement value) at the time of the event, of such real or personal property, with the exception that carpet and major appliances will be replaced with new like-kind items.
- (F) In no event will the city pay, or reimburse the property owner for the payment of special or consequential damages.

Establishment of Cleanup Criteria:

The Public Works Director may, from time to time, establish cleanup criteria which will

govern the city's cleanup and payment responsibilities under this Policy. In establishing such cleanup criteria, the city may give due consideration to generally available health guidelines, recommendations from governmental and academic experts, and other sources of guidance reasonably deemed by the city to be balanced, unbiased, and protective of health and safety.

Application - Time Limitations:

Any request for reimbursement of cleanup expenses under this policy, or payment of fair market value, may be made by filing a written application in such form as prescribed by the city. Such application must be submitted to the Public Works Director within thirty (30) days after the occurrence of the event.

Qualification for Assistance:

An application or request for assistance or payment under this Policy may qualify only if the city, after due inquiry or investigation, makes an affirmative determination that the event was the result of a backup of Providence City facilities, and that none of the following circumstances apply:

- (A) The loss was the result of a force majeure including but not limited to acts of God, acts of public enemies, insurrections, riots, war, landslides, lightning, earthquakes, fires, storms, floods, washouts, droughts, civil disturbances, explosions, acts of terrorism, sabotage, or any other similar cause or event not reasonably within the city's control;
- (B) The loss was caused by either an act or omission of the property owner, the property owner's agent, or a member of the property owner's family or business;
- (C) The property owner failed to file a claim hereunder in a timely manner, or failed to comply with any other procedural requirements of this Policy;
- (D) The loss is the result of intentional or negligent acts of third parties; or
- (E) The loss is wholly covered by private insurance.

Reduction in Assistance:

The city may limit any assistance, or reduce any payment, under this Policy based upon any of the following:

- (A) The property owner did not act responsibly to prevent, avoid or minimize the loss;
- (B) The property owner is unable to fully substantiate or document the extent of the loss;

(C) The loss is partially covered by private insurance.

Maximum Payments:

Without the express action of the Providence City Municipal Council, no assistance or payment under this Policy may exceed any of the following:

(A) _____ dollars (\$XXXX) per application or location; or

(B) _____ dollars (\$XXXXXX.XX) per incident.
Should a catastrophic event occur, the \$XXXXXX.XX per incident limitation will be prorated against all losses where assistance is requested unless additional funding is approved by the governing authority.

Payment Does Not Imply Liability:

Any assistance or payment made under this Policy shall not be construed as, and does not imply, an admission of negligence or responsibility on the part of the [public entity] for any damage or loss. Any assistance or payment made under this Policy is strictly voluntary on the part of the City. This Policy shall not in any way supersede, change or abrogate the state government immunity act, Utah Code Annotated, section 63-30-1 et seq., as amended, or its successor, and its application to the city, or establish in any person a right to sue the city under this Policy. Any assistance or payment made under this Policy and accepted shall constitute a full and complete release of any and all claims against the city, its officers, employees and agents arising from the incident.

Budget Expenditures:

The city authorizes a fund from which amounts may be drawn to make the foregoing assistance or payments. Such fund may be established from the ordinary rate structure of the city.

Claims from Other Governmental Agencies:

Notwithstanding any other provisions of this Policy, no application shall be accepted from the United States or any of its agencies, the State of Utah or any political subdivision.

NORTHERN CACHE VALLEY STORM WATER DESIGN STANDARDS

**Logan City
North Logan City
Hyde Park City
Smithfield City**

February 2009

Table of Contents

A. Definitions.....	3
B. Design Requirements	5
1. Storm Event	5
2. Allowable Storm Water Discharge	5
3. Curb and Gutter Flow Design.....	5
4. Channel Design.....	5
5. Pipe Design	6
6. Detention Basins	6
7. At Grade Retention Basins.....	7
8. Underground Detention, Retention, and Injection Systems.....	8
9. Water Quality/Treatment Requirements	8
10. Irrigation Canals and Systems	8
11. Storm Water Pollution Prevention Plan.....	9
C. Hydrologic Calculation	10
1. Design Methodology.....	10
2. Design Hydrographs	10
3. Design Frequency	10
4. Design Duration	11
5. Runoff Coefficients.....	12
6. Time of Concentrations Calculations.....	13
7. Total Allowable Discharge Design Flows	14
D. Hydraulic Calculations	15
1. Channel Design.....	15
2. Pipe Design	15
3. Spread Width Calculations	15
E. Detention and Retention Basin Designs	16
1. Detention Basins	16
2. Retention Basins	17
3. Underground Retention and Injection Systems (Sumps).....	17

F. Water Quality Treatment.....	18
G. Irrigation Base Flows	18
1. Water Right Flows	18
2. Return Flows.....	18
H. Storm Water Pollution Prevent Plan.....	18
I. Storm Water Submittals	19
1. Submittals Required for Hydrologic Calculations.....	19
2. Submittals Required for Water Quality/Treatment Requirements.....	19
3. Submittals Required for SWPPP	19

These standards cover the criteria and methodology to be utilized by the designers in the design, planning, evaluation, and reports associated with the design of storm water and related irrigation facilities. Any deviations from these criteria must be approved by the City Engineer in writing prior to initiating and again before finalizing the design. Where any deviations may also affect a canal company, a written approval of the canal company will also be required.

All designs completed must utilize and comply with the most current edition of the City Standards and Specifications.

A. DEFINITIONS

Certified Percolation Test: A saturated soil percolation test completed in accordance with Utah Administrative Rule, R317-4-5 with the exception that the test shall extend 2.0 feet below the bottom of the proposed invert of the pond. These tests shall be done in accordance with the certification requirements by a "qualified individual" as defined in R317-11.

Detention: The detaining or holding of water on site and releasing the water from the site into a pipeline, channel, or other water bodies at a slower rate than would otherwise occur.

DEQ: Utah Department of Environmental Quality

Detention Basin: A pond or basin, either above ground or below, that catches the storm water runoff from a contributing area and uses the detention process.

DWQ: Utah Division of Water Quality, a division of the DEQ.

EM 1110-2-1601: Engineering and Design – Hydraulic Design of Flood Control Channels, CECW-EH-D, US Army Corp of Engineers, June 1994

EPA: United States Environmental Protection Agency

HEC-11: Design of Rip-Rap Revetment, Hydraulic Engineering Circular No. 11, US Dept. of Transportation, Federal Highway Administration. (FHWA-IP-89-016, March 1989)

HEC-22: Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22, US Dept. of Transportation, Federal Highway Administration. (FHWA-SA-96-078, August 2001).

NOI: A notice of intent to construct permit obtained from the DWQ which is required for all construction on areas greater than or equal to 1.0 acres.

NOT: A notice of termination to construction submitted to the DWQ upon the stabilization of 70 percent of the project site that required a NOI.

PWD: Public Works Department

Retention: The retaining or keeping of water on site and preventing its release from the site by any method other than infiltration or evaporation.

Retention Basin: A pond that is built to capture and retain the design storm on site and dispose of it through infiltration.

Return Frequency: The frequency or likelihood of a storm of occurring. A 100-year storm has a one (1) percent chance of occurring in any given year while a 10-year storm has a ten (10) percent chance of occurring in any given year. This should never be interpreted as happening only once every 100 or 10 years for the two given examples.

Spread Width: The width of water flow as measured from the flowline of the gutter into the asphalt.

Stream Alteration Permit: A permit that is obtained through the Utah Division of Water Rights and is necessary anytime construction impacts a stream, wetland, riparian zone, or other water body defined as the waters of the U.S.

Storm Event: The event and hydrograph that define the design volume of precipitation, duration of the storm, intensity of the storm, and the pattern in which the precipitation falls.

SWPPP: A storm water pollution prevention plan which is required on any construction site.

Underground Injection/Retention System: A system designed to be fully underground and to dispose of water, entirely or in part, through infiltration. These require a special permit from the DWQ known as a Class 5 injection well permit.

Underground Injection Well: A facility, such as a pressured injection well, free draining injection well, sump, or other buried underground facility that infiltrates or injects surface water into the subsurface or groundwater system to eliminate surface runoff.

Wetlands Mitigation, or 404, Permit: A permit obtained through the US Army Corp of Engineers which allows the wetlands to be impacted and provides for required mitigation before the project can be approved.

B. DESIGN REQUIREMENTS

All projects, irrespective of the size or type, shall meet these requirements. Where projects are governed by a state or federal agency, their standards shall take precedence. All designs shall be in compliance with the City's construction standards and specifications.

Subsequent sections within this chapter identify the required methodology based upon the size and type of the project.

1. Storm Event

Design all storm water facilities associated with new development for the 100-year event. The storm duration is subject to the size of the contributing area and the project as discussed in Section C, Hydrologic Calculation.

Existing development shall be required to construct storm water facilities to detain and treat runoff anytime at the time of remodeling or reconstruction of any facilities under the same policy as the International Building Code. However, the return frequency and design duration may be modified under extreme conditions at the direction of the City Engineer with approval of the agency managing the receiving waters.

2. Allowable Storm Water Discharge

The storm water runoff leaving the site during the design storm is limited to the lesser of:

1. 0.2 cfs per acre, or
2. Discharge prior to development, current or pre-existing (Historical Flow).

Where insufficient information or where costs of the analysis of the pre-existing conditions are not justified for sites less than 1.0 acre, the runoff shall be limited to 0.1 cfs per acre and documented as such on the site plan in the appropriate table.

3. Curb and Gutter Flow Design

1. The flow depth in the gutter shall not be allowed to exceed the lesser of the top back of curb elevation (TBC) or the peak drive way approach elevation during the required storm event. This includes a combination of piping, curb and gutter, and ditches.
2. Where the flow depth is exceeded, storm drain inlets and a piped system shall be required and appropriate actions taken to eliminate overtopping of the curbs and flooding private property.

4. Channel Design

1. Channel side slopes shall not be steeper than 3:1 (H:V) unless they are concrete. Where they are incorporated into landscaping, flatter slopes shall be required. This will be evaluated on a case by case basis.

2. Channel velocities shall be slow enough to prevent scour, and where possible, facilitate further settlement of sediments unless the channel is used to deliver irrigation water as well. If the channel will also carry irrigation water, maintain velocities above 2 ft/sec if possible, but at no time exceed 4 ft/sec.
3. Where rip-rap is used, design shall be in accordance with EM-1110 from the US Army Corp of Engineers or HEC-11 from the Federal Highway Administration.
4. Free board on the channels shall be in compliance with the Bureau of Reclamation, Design of Small Canal Structures.
5. Channel maintenance easements shall be maintained as required in the City and Canal Company agreements.

5. Pipe Design

1. For storm water pipes, roughness coefficients listed in the table included in Section D of these standards that coincide with the accepted pipe materials in the City's Standard Specifications, most current edition shall be used.
2. Maintain velocities in the pipes at design flows sufficient to prevent sediment deposition and low enough to prevent scour damage to the pipe.
3. Pipe outlets shall have a flared end discharge unless more stringent methods of energy dissipation are required.
4. Minimum diameter of storm drains shall be:
 - a. 12 inches for laterals
 - b. 15 inches for trunk lines
 - c. 18 inches under the UDOT right of way.
5. Pipe sizes shall not decrease in the downstream direction.
6. Maximum flow depth in the pipe during the design storm shall not exceed 0.85 times the diameter of the pipe.

6. Detention Basins

1. Detention basins, or other equivalent methods to limit the storm water release rate and improve the water quality when approved by the City Engineer, are required prior to discharge into any canal.
2. All detention basins shall be sized to meet the requirements of Section B of this chapter.
3. Side slopes shall not be steeper than 3:1 (H:V).
4. The maximum depth at the emergency overflow location of the pond shall be three feet plus one (1) foot of freeboard above the emergency overflow and a maximum water depth of three (feet) below the emergency overflow. All other ponds require special design, approval, and permitting including safety precautions on a case by case situation.

5. All ponds shall be stabilized with rocks or planted vegetation to prevent internal erosion. Vegetation or other stabilization must be maintained.
6. All ponds must have a water treatment method to prevent heavy sediment, floatable debris, or petroleum products from leaving the pond.
7. Where orifice and snouts are used, the orifice size is limited to not less than three (3) inches in diameter to prevent clogging.
8. Emergency overflows and the flow path of the overflows shall be mapped to natural streams, canals, or city approved drainage system for purpose of flood mapping using existing topographic mapping.
9. The emergency overflow shall be designed to pass the full 100 year event.
10. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through the detention pond or within 5 feet of the pond berms.
11. The invert or lowest point in the pond shall be not less than 12-inches above the existing or historical groundwater levels (whichever is higher).

7. At Grade Retention Basins

1. All retention basins shall be sized to meet the requirements of Section B of this chapter and to contain 100 percent of project site runoff from the design storm.
2. Side slopes shall not be steeper than 3:1 (H:V).
3. The maximum depth of the pond shall be three feet plus one (1) foot of freeboard above the emergency overflow and a maximum water depth of three (feet) below the emergency overflow. All other ponds require special design, approval, and permitting including safety precautions on a case by case situation.
4. All ponds shall be stabilized with rocks or planted vegetation to prevent internal erosion. Vegetation or other stabilization must be maintained.
5. All ponds shall drain within 3 days (72 hours) from the end of the storm event. This is to be documented with a certified percolation test and documented in the soils report.
6. Emergency overflows and the flow path of the overflows shall be mapped for purpose of flooding and flood insurance requirements.
7. The emergency overflow shall be designed to pass the full 100 year event.
8. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through the retention pond or within 5 feet of the pond berms.
9. The invert or lowest point in the pond shall be not less than 12-inches above the existing or historical groundwater levels (whichever is higher).

8. Underground Detention, Retention, and Injection Systems

1. Underground retention and injections systems, including sumps, are not allowed in drinking water source protection zones.
2. All detention and retention basins are to be sized to meet all the requirements of Section B, Design Requirements of this chapter.
3. Underground systems shall provide adequate access points for cleaning and maintenance.
4. All systems shall drain by discharge (detention basins) or infiltration (retention basins) within 3 days (72 hours) from the end of the storm event. This is to be documented with a certified percolation test and documented in the soils report.
5. Sumps shall provide adequate water quality treatment to prevent contamination of the ground water aquifer.
6. Emergency overflows and the flow path of the overflows shall be mapped for purpose of flooding and flood insurance requirements.
7. The emergency overflow shall be designed to pass the full 100 year event.
8. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through or under the underground retention system.

9. Water Quality/Treatment Requirements

1. Water discharging from the project site shall not exceed 70 mg/L of total suspended sediments or increase the turbidity of the receiving waters by 10 NTU.
2. The treatment system shall remove oils, greases, and any other floatable petroleum products.
3. The treatment system and best management practices shall reduce the total phosphorus in the discharge to below 0.10 mg/L.
4. Total dissolved solids of the receiving waters must not be increased above 350 mg/L and the discharge water must not exceed 1000 mg/L.
5. All contaminants shall be stored to prevent impact by storm water and to contain any spilled materials on site. The location and methods of this storage shall be shown on the design plans.

10. Irrigation Canals and Systems

All irrigation canals, pipes, ditches, channels, structures, diversions, and other portions of the system shall be designed for the full range of base flows including historical maximum flows, historical minimum flows, and the full water right flow. Then the channel shall have the upstream storm drain inflows and irrigation return flows added to

the model to ensure that all future systems have sufficient capacity. These design flows must to be approved by the associated canal company in writing and the City Engineer.

11. Storm Water Pollution Prevention Plan

Storm water pollution prevention plans (SWPPP) are required on all projects in City boundaries and every project must comply with City standards and specifications, whether approved by the PWD or not. Table VIII-1 summarizes the requirements of the SWPPP.

Table VIII-1, SWPPP Requirements

Contributing Area Size	Minimum Requirements
Less than 1.0 Acre	Erosion and sediment control plan, dust control plan, debris and garbage control plan, post construction BMPs, Inspection and maintenance plan, record keeping and training, and final stabilization. These can be on a standard design sheet as detailed notes with supporting details.
1.0 Acre and larger.	A full SWPPP using the EPA template downloadable from the DWQ including all elements. Maps and figures in the document must also address construction sequence, total area of site and area to be disturbed, pre and post runoff analysis, identification of receiving waters, map of drainage patterns with outfall locations and downstream flow paths, locations of structural controls, and locations of equipment and material and chemical storage, and methods of containment. Additionally, the document must include a map identifying where each BMP is to be used and provide details for the implementation of the BMPs.

C. HYDROLOGIC CALCULATION

1. Design Methodology

Numerous methodologies and hydrologic methods are available. While, in some cases, these other methods might provide a more favorable estimate, they are not acceptable to PWD unless approved by the City Engineer. Table VIII-2 summarizes the required methods based on the area contributing flows to the system, including offsite flows.

Table VIII-2, Hydrologic Methods Required

Contributing Area (Acres)	Methodology Required
Less than 1.0 Acre	Rational Method, Time of concentration = 10 minutes
1.0 Acre to 10.0 Acres	Rational Method, Time of concentration calculated.
Greater than 10.0 Acres	Subject to additional requirements of individual Cities. Each City has different hydrologic and hydraulic conditions. Verify with the City Engineer the methods and requirements prior to initiating projects.

2. Design Hydrographs

The design hydrographs to be used for each storm vary based on the size of the area being modeled and designed. Table VIII-3 summarizes the hydrograph which shall be used during the design.

Table VIII-3, Required Design Hydrograph

Contributing Area (Acres)	Methodology Required
Less than 1.0 Acre	Rational Method
1.0 Acre to 10.0 Acres	Rational Method
Greater than 10.0 Acres	SCS Type II Storm or the Farmer Fletcher Hydrograph with special approval.

3. Design Frequency

All storm water calculations shall be based on the 100-year event within the City for subdivisions and contributing areas less than 640 acres (1 square mile). For areas larger than 640 acres, design shall address the 100-year, 50-year, 25-year, and 10-year events.

4. Design Duration

Design duration shall be based on the criteria summarized in Table VIII-4.

Table VIII-4, Required Design Durations for Storm Water Systems

Larger of Contributing Area or Project Area (Acres)	Pipes, Channels, Inlet Spacing	Detention Ponds and Facilities	Retention Ponds and Facilities
Less than 1.0 Acre	10 Minutes	24-hours	48-hours
1.0 Acre to 10.0 Acres	Calculated Time of Concentration	24-hours	48-hours
Greater than 10.0 Acres	Calculated Time of Concentration	24-hours	48-hours

The amount of rainfall and the intensity-duration tables for different rainfall events are included in Table VIII-5 and Table VIII-6 for use within the City. Data compatibility with PWD models is mandatory. This data is taken from the National Weather Service, Logan Radio KVNU site.

Table VIII-5, Depth-Duration Summary Table, (KVNU) Logan Station (inches)

ARI (Years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr
10	0.23	0.35	0.44	0.59	0.73	0.88	0.98	1.28	1.64	2.04	2.33
25	0.31	0.47	0.58	0.78	0.96	1.13	1.23	1.56	1.98	2.41	2.75
50	0.37	0.57	0.70	0.94	1.17	1.36	1.45	1.79	2.24	2.71	3.08
100	0.45	0.68	0.85	1.14	1.41	1.61	1.71	2.05	2.52	3.02	3.42

Table VIII-6, Intensity-Duration-Frequency, (KVNU), Logan Station (inches/hour)

ARI (Years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr
10	2.80	2.13	1.76	1.18	0.73	0.44	0.33	0.21	0.14	0.09	0.05
25	3.68	2.80	2.31	1.56	0.96	0.56	0.41	0.26	0.16	0.10	0.06
50	4.46	3.40	2.81	1.89	1.17	0.68	0.48	0.30	0.19	0.11	0.06
100	5.40	4.10	3.39	2.29	1.41	0.81	0.57	0.34	0.21	0.13	0.07

5. Runoff Coefficients

PWD has established standard runoff coefficients that shall be used to ensure compatibility of results from the base model and each individual project. Calculations differing from these values shall be returned to the design professional for corrections.

a) Rational Method

Table VIII-7 identifies the rational equation runoff coefficients that shall be used.

Table VIII-7, Required Runoff Coefficient

Condition	Rational Method
Asphalt	0.95
Concrete Pavement	0.95
Grassed Open Space (slopes less than 2 percent)	0.15
Grassed Open Space (slopes greater than 2 percent)	0.20
Graveled Areas	0.85
¹⁾ Residential Lots <8000 sq-ft	0.70
¹⁾ Residential Lots, 8000 sq-ft to ¼ acre	0.50
¹⁾ Residential Lots, ¼ acre to ½ acre	0.45
¹⁾ Commercial Business Areas	0.75
¹⁾ Industrial Areas	0.85

¹⁾ Where the weighted values are less than these coefficients, or insufficient data is available outside of the project area, use these values. In no case will values less than the provided coefficients be used.

b) SCS Method

The SCS method, as developed in TR-55 by the Soil Conservation Service in 1950s, requires more engineering interpretation than the rational method since it is also necessary to address the soil conditions, vegetative cover, and the antecedent soil condition (AMC) being evaluated. There are four primary soil conditions available in the SCS method, grouped as A, B, C, and D.

Group A soils typically are gravels and sands with fast infiltration rates and low runoff potential. While there are Group A soils on some of the benches and along the Logan river in some places, as soon as any landscaping with topsoil occurs, the stormwater benefit of these soils is lost. As a result, the Group A classification shall not be used.

Group B soils have moderate infiltration rates when wetted and consist of moderately well drained soils with moderately fine to coarse textures, typically without clay.

Group C soils have slow infiltration rates if thoroughly wetted and consist of soils that have a layer that impedes vertical infiltration.

Group D soils have a slow infiltration rate if thoroughly wetted and consist of clays, usually with high swelling potential, soils with a permanent high water table, soils with a clay pan or hard pan later near the surface, and shallow soils over an impervious material.

Soil maps and references available from the Natural Resource Conservation Service will identify the group associated with each soil class. HOWEVER, the designer needs to consider the effects of the final landscaping, such as the use of top soil, as part of his design.

In addition to the soil group, the antecedent moisture condition (AMC) must also be considered. For the average case, the SCS has defined AMC II to apply as the definition of the conditions preceding most annual floods. For this purpose, AMC II will be used for all PWD approved projects.

Upon selecting the soil group, the appropriate curve number can be selected from various standard references and text books. A common free reference is the HEC-HMS technical reference manual which can be downloaded from the Army Corp of Engineers HEC website.

6. Time of Concentrations Calculations

There are numerous equations for calculating the time of concentrations. While many may be applicable to various locations, Table VIII-8 identifies the methods that shall be used in determining the time of concentrations within the PWD areas.

Table VIII-8, Time of Concentration Calculations

Larger of Contributing Area or Project Area (Acres)	Sheet Flow	Open Channel Flow	Piped Flow
Less than 1.0 Acre	Less than 10 min ⁽¹⁾	Less than 10 min ⁽¹⁾	Less than 10 min ⁽¹⁾
1.0 Acre to 10.0 Acres	Calculated per HEC-22	Calculated per HEC-22	Calculated per HEC-22
Greater than 10.0 Acres	Subject to City Requirements	Subject to City Requirements	Subject to City Requirements

1). For areas less than 1.0 acres, the total time of concentration adds to 10 minutes.

7. Total Allowable Discharge Design Flows

The total discharge design flows to be used for design shall be the combination of the allowable design storm flows and base flows which may include the maximum irrigation diversion based upon water rights, whether the existing facilities have sufficient capacity or not, and maximum return flows from sources upstream of the canal or irrigation ditch.

D. HYDRAULIC CALCULATIONS

Hydraulic calculations shall be used for sizing pipes and open channels associated with the total design flows.

1. Channel Design

Channels shall be designed with a trapezoidal cross section using roughness coefficients associated with the final restored condition. The Manning's equation methodology shall be used for sizing and considering the associated backwater impacts from downstream conditions. Computer software can be used to calculate the channel size, but sufficient data and results shall be provided to validate the procedure, assumptions, and conclusions.

2. Pipe Design

For design of pipes and culverts, the designer shall demonstrate that the pipes meet the standard design requirements using Manning's equation for open channel flow and standard culvert calculation procedures to determine inlet and outlet control conditions. Full pipe flow designs are not allowed for gravity systems. For storm water pressure mains from pump stations, either the Hazen-Williams or Darcy-Weisbach equations will be allowed. Roughness coefficients and assumptions shall be in accordance with Table VIII-9 selected from various references.

Table VIII-9, Mannings Coefficients for Pipe

Material	Roughness "n"
Smooth Interior HDPE or ADS Pipe	.010
Corrugated Metal Pipe (CMP)	.024
Concrete	.013
PVC	.010

The design and sizing may be done manually or with the use of computer software. However the results must be provided as part of the submittal review process.

3. Spread Width Calculations

Spread width calculations and depth of flow in the gutters shall be completed in accordance with HEC-22 methodology developed by the Federal Highway Administration (FHWA). These calculations can be completed using numerous available software or manually. However, the calculations must be documented and provided to the City for review for the design storms.

E. DETENTION AND RETENTION BASIN DESIGNS

Detention or retention basins shall be used to reduce the peak flow rates to meet the discharge requirements and to provide water quality improvements by detaining the water and settling sediments and other contaminants or by preventing the storm water from leaving the site. These basins shall be constructed as part of the individual development projects, both residential and commercial, and regional projects as outlined in the most current PWD storm water master plan.

1. Detention Basins

The detention requirements shall be calculated differently depending upon the size of the projects and the storm water contributing area as summarized by the Table VIII-9.

Table VIII-9, Detention Basin Sizing Methodologies

Contributing Area Size	Method
Less than 1.0 Acre	Volume of runoff generated = volume of detention. This can be done with a simple spreadsheet.
1.0 Acre to 10 Acres	Volume of runoff generated = volume of detention - discharge through the outlet. Spreadsheet routing of the hydrograph or the use of more sophisticated models are required.
Greater than 10 Acres	Subject to additional requirements by each City.

The ponds shall be designed to meet all of the requirements in VIII.B.6. The outlets shall be modeled as a function of the depth of the ponds. In most cases, this results in a depth-discharge curve and a depth-storage curve being created for the ponds and used in routing the hydrographs. These curves shall be provided to the PWD for review as part of the calculations.

While the magnitude of flows from a storm larger than the design storm is unknown, the emergency overflows shall be sized sufficient to pass the full design storm to prevent jeopardy to the detention basin and provides for the normal outlet to fully fail, or a second design storm to occur prior to the basin fully draining.

As part of the design, a percolation test shall be completed at the site of the pond with the hole excavated to at least two feet below the design invert. As the hole is dug, the soils shall be logged and photographed, with particular care given to 1) when saturated soils were encountered, 2) the elevation of the water table, and 3) the presence of "mottling" in the soil showing the historical presence of groundwater. This information shall be used in establishing the final invert elevation as required in Section B.

2. Retention Basins

The retention requirements shall be calculated differently depending upon the size of the projects and the storm water contributing area as summarized by the Table VIII-10. All calculations for sizing shall be completed base on a time step not exceeding 15 minutes.

Table VIII-10, Retention Basin Sizing Methodologies

Contributing Area Size	Method
Less than 1.0 Acre	Volume of runoff = volume of retention. This can be done with a simple spreadsheet.
1.0 Acre to 10.0 Acres	Volume of runoff generated = volume of retention. Spreadsheet routing of the hydrograph or the use of more sophisticated models are allowed.
Greater than 10.0 Acres	Subject to additional requirements by each City.

As part of the design, a percolation test shall be completed at the site of the pond with the hole excavated to at least two feet below the design invert. As the hole is dug, the soils shall be logged, with particular care given to 1) when saturated soils were encountered, 2) the elevation of the water table, and 3) the presence of "mottling" in the soil showing the historical presence of groundwater. This information shall be used in establishing the final invert elevation as required in Section B.

Since these ponds are dependent upon infiltration to dispose of the storm water, the designer shall designate methods of completion of the pond to maintain the infiltration rates determined by the certified percolation test. Note that where question of the effectiveness of the restoration and completion of the pond is present, the City may require the contractor to complete a new certified percolation test with a test hole not exceeding 6 inches to demonstrate the soil are not sealed by compaction.

3. Underground Retention and Injection Systems (Sumps)

Sumps, underground retention systems, and other underground injection systems are not allowed in drinking water source protection zones. Maps of these zones are available for review from the City Engineer. Additionally, all other locations are governed by the permitting requirements of the DWQ. Prior to submitting any designs for approval, the designer is expected to verify that location of the injection system is acceptable and obtain the Class 5 Injection Well Permit before any approvals will be granted.

F. WATER QUALITY TREATMENT

All designs shall provide performance that will meet or exceed the more stringent requirements between the City, DWQ, and EPA. Primary best management practices (BMPs) for erosion and sediment control are acceptable with the appropriate documentation.

G. IRRIGATION BASE FLOWS

Every existing irrigation ditch or canal has played a part of the City storm water facilities from the settling of the community. When the canals were built, they delivered water from the river and intercepted storm water runoff from uphill naturally. However, when the canals flooded, there weren't houses at risk back then. Now, with ongoing development, these conditions have changed. Design of storm drainage systems using the canals have special requirements as a result and must be approved by not only the City, but also the canal company serving the area of question.

1. Water Right Flows

The design flow will be the maximum flow allowed by the canal water rights. Flows down laterals and distribution ditches shall be obtained in accordance with the agreements between the Cities and the canal companies. Obtain the water righted flows and the lateral flows directly from the canal companies. These must be documented in a letter signed by an authorized canal company representative to be accepted by the City. Primary canal company contacts are available from the City.

2. Return Flows

Many of the canals receive return flows from the upstream canals. This can seriously complicate the storm water design since many people turn off their irrigation water and simply pass it down the ditch during storms. This can result in major flooding issues on some canals, even without any storm water entering the canals. When designing a section of the canal, it shall be necessary to take the return flows into consideration and to discuss them with the canal companies. Again, the agreed upon flows must be obtained in accordance with the canal agreements with the Cities.

H. STORM WATER POLLUTION PREVENT PLAN

All elements of the EPA template available from the DWQ website must be met without respect for project size. However the details and format changes tremendously as discussed in item B.11 above. Many designers have an erosion control plan that can be easily modified to meet all of the requirements for sites less than 1.0 acre. However, for larger sites, the PWD requires the EPA template available from our website be used.

I. STORM WATER SUBMITTALS

1. Submittals Required for Hydrologic Calculations

Every review package shall provide basic hydrologic calculations in accordance with the specific Cities. Check with the City prior to initiating the calculations.

2. Submittals Required for Water Quality/Treatment Requirements

The water quality control and treatment methods shall be defined in the SWPPP and on the plan sheets. The associated additional specifications shall provide sufficient information for the contractor to build the system and ensure that it will meet the required performance specifications.

3. Submittals Required for SWPPP

A completed SWPPP prepared in accordance with Section B.11 shall be submitted with the review package. For all construction sites 1.0 acre or larger, copies of the Notice of Intent (NOI) from the Utah Division of Water Quality shall be submitted. Additionally, copies of all additional permits which may be required for the project including stream alteration permits, wetlands permits, Class 5 injection well permits, groundwater discharge permits, etc., shall be included with the SWPPP.